

# ADCBATT

Power make dreams possible

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# 12.8V 100Ah 1280Wh LiFePO4

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**DEEP CYCLE BATTERY**

**NEED HELP ? [SUPPORT@ADCBATT.COM](mailto:SUPPORT@ADCBATT.COM)**

**USER MANUAL**

**ABLF12C10**

## **IMPORTANT SAFETY INSTRUCTIONS**

BEFORE CHARGING THE BATTERY, READ ALL INSTRUCTIONS IN THIS MANUAL.

### **CAUTION**

THIS BATTERY SHOULD BE CHARGED USING A LIFEPO4 BATTERY CHARGER AND THE CHARGE VOLTAGE/CURRENT IS  $14.6 \pm 0.2V$  / 50A MAX.  
RISK OF FIRE OR EXPLOSION  
AVOID MECHANICAL SHOCK  
DO NOT SHORT CIRCUIT  
DO NOT CRUSH  
DO NOT DISASSEMBLE  
DO NOT INCINERATE  
DO NOT HEAT OVER 150°F  
DO NOT CHARGE OVER 15V  
DO NOT THROW THE BATTERY INTO WATER OR FIRE  
DO NOT USE OTHER BRAND BATTERY OR OTHER TYPE BATTERY INTO SERIES OR PARALLEL (BMS SETTING IS DIFFERENT)  
DO NOT REVERSE CONNECTION FROM THE BATTERY TO CHARGER  
DO NOT USE FINGER TIGHTEN, USE A TORQUE WRENCH TO TORQUE THE BOLT.  
KEEP THE BATTERY AWAY FROM FIRE, DANGEROUS GOODS OR MATERIALS

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**NOMINAL VOLTAGE**

12.8V

**CAPACITY**

≥100Ah / 20A discharge at 77°F

**CHARGE**

50A max at 14.6V±0.2V

This battery should be charged using a lifepo4 battery charger.

**DISCHARGE**

100A max continuous, 200A max. 3second pulse, 10V discharge cut off voltage.

20-50A recommended for longest lifetime

**TEMPERATURE**

Charge: 32 - 131°F

Discharge: -4 - 131°F

Storage: 50 - 86°F

Long Period Storage: 50% charged, charge the battery every 3 months

**CYCLE LIFE (≥80% Capacity at 77°F)**

>3500 cycles with 100% DOD, 20A / >8000 cycles with 50% DOD, 20A

**MONTHLY SELF DISCHARGE**

≤3.5% at 77°F

**DIMENSION (L/W/H)**

12.08x6.65x8.18inch / 307x169x208mm

**WEIGHT**

23.8Lbs/ 10.8Kgs

**TERMINALS**

F12 Terminals, Bolt Size: M8

**SMART BMS BUILT-IN**

Over Charge Voltage Cut Off - Over Discharge Voltage Cut Off - Over Discharge Current Cut Off - Short Circuit Protection - High Temperature Charge Cut Off - Cell Balancing - High Temperature Discharge Cut Off

**CERTIFICATION**

All batteries are UN 38 certified. ADCBATT's cells are UL1642 certified and complied with IEC62133 standards. Meets all International regulations for ground, train, air & sea transport.

**3 YEARS WARRANTY**

Please use the battery correctly according to the manual instructions.

We stand by our workmanship. If we made a mistake in building your batteries, we will fix it or replace it.

ADCBATT offers a 3 year manufacturer defect warranty from the date of purchase

To submit a warranty claim, the battery maybe required to be shipped back to ADCBATT for further inspection.

Free lifetime technical support & battery analysis.

Warranty only applies to original owner ( NOT Transferable)

Any modifications or damage due to gross negligence or abuse are not covered by the warranty.

**CHARGING TIPS**

**CHARGING METHODS**

To properly charge your ADCBATT Batteries, you can use a LiFePO4 battery charger, inverter, controller, power source and etc.

**1. BATTERY CHARGER**

Use a 14.6V LiFePO4 battery charger.

Recommend Charging Voltage: 14.4-14.8V

Recommend Charging Current:

20A - The battery will be fully charged in approx 5hrs to 100% capacity

50A - The battery will be fully charged in approx. 2hrs to 98% capacity.

**2. INVERTER OR CONTROLLER**

Select " 12V (14.6V) LI (LiFePO4) Mode"

Select " User Mode" to enter values according to the belowing parameter,

CHARGING		DISCHARGING	
Charging Limit Voltage	14.6V	Low Voltage of Disconnect	10.8V
Over Discharge Disconnect Voltage	15V	Low Voltage of Reconnect	12.4V
Over Voltage Reconnect Voltage	14.2V	Under Voltage Warning Voltage	11.6V
Equalizer Charging Voltage	14V	Under Voltage Warning Reconnect Voltage	12V
Float Charging Voltage	13.8V	Discharging Limit Voltage	10.4V
Boost Charging Voltage	13.8V	Over Discharge Disconnect Voltage	10.4V
Boost Reconnect Charging Voltage	13.2V	Over Discharge Reconnect Voltage	11.6V
		Over Discharge Delay Time	0.8seconds
OTHERS			
Equalize Duration			120min
Boost Interva		Not Suitable for Lithium battery	
Boost Duration			120min

**STATE OF CHARGE ( SOC )**

The battery capacity could be roughly estimated by it's voltage.

Test Step:

1. Disconnect the charger or loads
2. 15mins rest
3. Test the voltage at 0A.

CAPACITY	VS	VOLTAGE	
100%		14.4V	--- Charging
100%		13.6V	--- Resting
99%		13.4V	
90%		13.3V	
70%		13.2V	
40%		13.1V	
30%		13.0V	
20%		12.9V	
10%		12.8V	
1%		10.8V	--- Recomend Low Voltage Disconnect Voltage
0%		9.5V	

**HOW TO STORE BATTERIES ?**

We recommend bringing the ADCBATT Batteries to a 50% state of charge. Then, disconnect the battery from any loads by removing the negative cable from one battery. On average, the batteries lose < 3.5% capacity per month at 77°F. This is subject to increasing if stored in extreme environmental conditions.

**CONNECTION TIPS**

**PLEASE FOLLOW THE BELOWING SUGGESTIONS**

- 1. Same Brand (Do not connect the other brand lifepo4 battery due to the bms setting is different.)
- 2. Same Battery Type (LiFePO4) (Do not connect the other battery type with this battery, like Li-ion, SLA or other battery.)
- 3. Same Voltage (12V)
- 4. Same Capacity (100Ah)

**CONNECTION STEPS**

**STEP 1**

Fully charged the battery separately

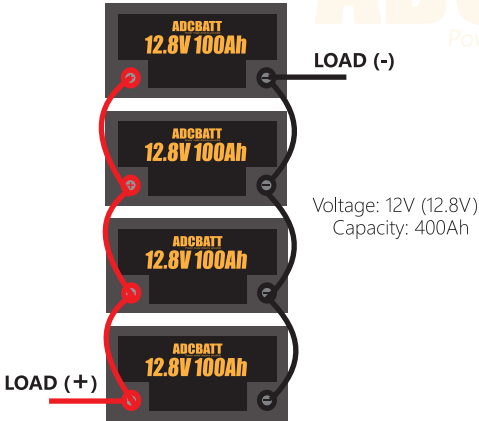
**STEP 2**

15mins rest, test the voltage, it should be >13V

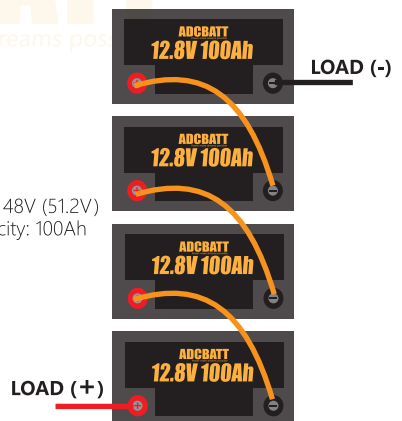
**STEP 3**

Connect your batteries in series or / and in parallel.

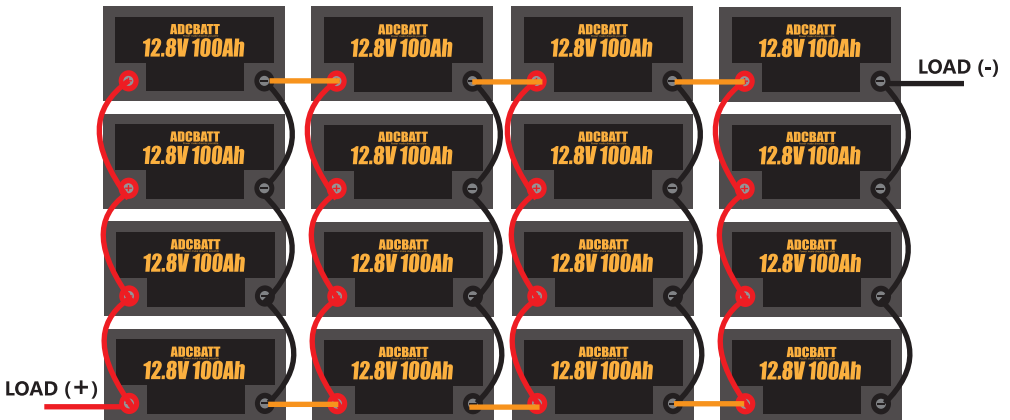
**MAX. CONNECT IN PARALLEL**



**MAX. CONNECT IN SERIES**



**MAX. CONNECT IN SERIES & PARALLEL (4S4P)**



Firstly, 4pcs 12V 100Ah connect in parallel (12V 400Ah), then 4pcs 12V 400Ah connect in series, the total pack is 48V 400Ah

## HOW DOES THE SMART BMS PROTECT YOUR BATTERIES?

### **Over Charge Voltage Cut Off (>15V)**

If an individual cell voltage exceeds a prescribed threshold during charging, the BMS will stop the charging.

### **Over Discharge Voltage Cut Off (<8.8V)**

If an individual cell falls below a prescribed threshold during discharge, the BMS will prevent further discharge. When the battery voltage reaches over 10V, the battery will automatically reconnect after 1.5 seconds.

### **High Temperature Charging (>140°F / 60°C) and Discharge (>176°F / 80°C)**

The BMS will not allow a charging current if the internal temperature of the battery has reached 140°F(60°C). The BMS will not allow a discharging current if the internal temperature of the battery has reached 176°F(80°C).

### **Over Current Discharge**

If the over current protection is tripped, the BMS will shut the battery down and will remain disconnected until you remove the battery cables. While the battery cables are disconnected, we suggest taking the battery voltage with the use of a voltmeter. If it reads above 10V, reconnect the battery cables. If you are unsuccessful at obtaining a voltage reading above 10V, please contact our technical support team, support@adcbatt.com.

### **Short Circuit Discharge Protection**

If the short circuit protection is tripped, the BMS will shut the battery down and will remain disconnected until you remove the battery cables. While the battery cables are disconnected, we suggest taking the battery voltage with the use of a voltmeter. If it reads above 10V, reconnect the battery cables. If you are unsuccessful at obtaining a voltage reading above 10V, please contact our technical support team, support@adcbatt.com.

### **Cell Balancing**

A passive balancing process is activated by the BMS at the top of each charge cycle when the battery voltage exceeds around 14.06V. This ensures that all the cells remain at the same state of charge, which helps pack performance.

### **SUITABLE FOR**

Trolling Motors  
 Solar Energy Storage  
 Industrial Batteries  
 LiFePo4 replacement for SLA 12V  
 Home Solar & Power Walls  
 Marine Application  
 Fish Finders, Flashers, Boating Electronics  
 Ice Fishing  
 Recreational Vehicles  
 Off-Grid Homes  
 Deep Cycle Application Only

### **NOT FOR STARTING GASOLINE ENGINES**

## FAQS

### **What should I do if the battery is 0V ?**

Don't worry. Due to the over current or short circuit protection is tripped, please disconnect the battery cable from the load, test the battery voltage, if the voltage is more than 10V, reconnect the battery cable. If the voltage is lower than 10V, please contact our technical team, support@adcbatt.com.

### **Is it necessary to charge the battery out of the box ?**

Yes, you need to fully charge the battery. NOTE: Please also fully charge the battery if you want to connect the battery in series or parallel.

### **How can I check the battery voltage ?**

If you don't have a battery monitor, you can use a multimeter to monitor the voltage.

### **Can I mount the battery in any position ?**

You can mount our battery in any position. Please make sure to secure and protect the terminals when mounting.

**FOR MORE FAQS,  
 PLEASE VISIT OUR WEBSITE: WWW.ADCBATT.COM**

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Li-ion

Made in China