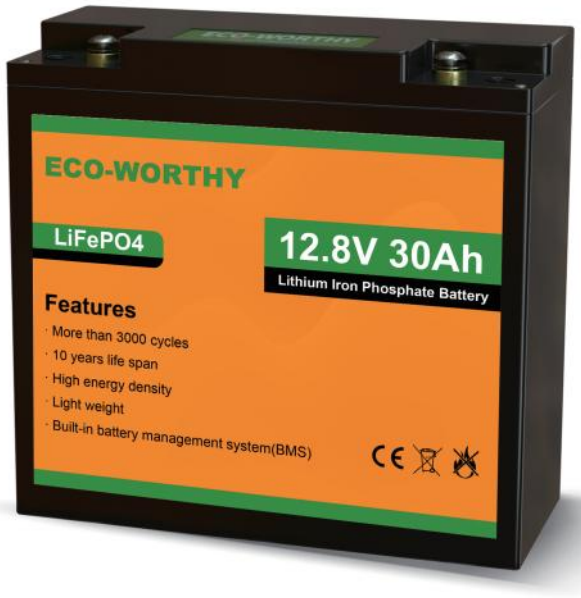
ECO-WORTHY

LIFEPO4

LITHIUM IRON PHOSPHATE

User Manual

12V 8Ah · 12V 10Ah · 12V 20Ah · 12V 30Ah · 12V 50Ah



Specifications

Battery parameters

Battery Type	12V 8Ah	12V 10Ah	12V 20Ah	12V 30Ah	12V 50Ah
Rated Power	96Wh	128Wh	256Wh	384Wh	640Wh
Nominal Voltage	12.8V	12.8V	12.8V	12.8V	12.8V
Voltage Range	10V-14.6V	10V-14.6V	10V-14.6V	10V-14.6V	10V-14.6V
Charge Voltage	14.6V	14.6V	14.6V	14.6V	14.6V
Maximum Continuous Charge Current	10A	10A	20A	20A	40A
Maximum Continuous Discharge Current	10A	10A	25A	25A	60A
Standard Operating Temperature	77°F±9°F / 25°C±5°C				
Charge Temperature Range	32°F~131°F / 0°C~55°C				
Discharge Temperature Range	-4°F~131°F / -20°C~55°C				
Dimension	5.9*3.7*2.6 inch/ 15*9.4*6.6cm	5.9*3.7*2.6 inch/ 15*9.4*6.6cm	7.1*6.3*3 inch/ 18*16*7.6cm	7.1*6.3*3 inch/ 18*16*7.6cm	8.8*5.3*7inch/ 22*13.5*17.8cm
Weight	0.88kg/1.9lb	1.1kg/2.43 lbs	2.3kg/4.85 lbs	3.26kg/7.2 lbs	4.9kg/10.8lbs
Terminal Bolt Size	F2	F2	M5	M5	M6

BMS Parameter

Protections	**Condition**	
Over-voltage	Triggering	14.5~14.6V
	Recovery	13.9~14.2V
Under-voltage	Triggering	9.2~9.5V
	Recovery	10.5~10.8V
Short circuit protection	Triggering	50A(8Ah,10Ah) 100A(20Ah,30Ah) 200A(50Ah)
	Recovery	Remove Short Circuits

Charging Method

Battery charger（mains power）

The most ideal way to charge a LiFePO4 battery is with a lithium iron phosphate battery charger, as it will be programmed with the appropriate voltage limits. Most lead-acid battery chargers will do the job just fine.

To select a proper charger for your battery, you should choose one that capable to charge the ECO-WORTHY battery to full, its rated output/charging voltage should match the LiFePO4 battery's standard charge voltage, which varies in different battery types, refer to the above parameter table for detailed data.

Solar panel (DC power)

You can also use solar panel to charge your ECO-WORTHY LiFePO4 battery, but please make sure to choose a proper controller, it should contain the LiFePO4 battery mode, or Li-ion battery mode. Both PWM controller and MPPT controller are okay.

If you don't have a controller, you can connect the battery to the solar panel directly, too. The BMS inside will protect the battery in most time. But if there is a defect on the battery BMS, the battery will be damaged.

Troubleshooting

·If you found the battery can not be fully charged to its full voltage rating(14.6V/29V/58V), the charge tools may not compatible with it, you could check if the charger/controller contains the proper output voltage for LiFePO4 battery.

·If the charger is suitable, but the battery still can not be fully charged, it's may due to the fault in BMS. With glove and some tools, you could open the top cap of the battery, take out the BMS board, and directly connect the cells wire to the terminals, then try to charge it without BMS, it'll be safe if you have a charger/controller with protections.

·If the connected batteries could not reach the rated capacity, it may because that the unbalancing charging process causes voltage difference among those individual batteries You could disconnect them first, and try to charge them one by one, to see if each battery is in good condition.

· If the battery is over discharged and triggers the over-discharge protection, please remove the load or inverter, keep the charge process until it recovers. If it's still can not be re-charged, try to remove the controller, use a solar panel or something else with voltage higher than 15V to directly boot it.