



## Lithium (LiFePo4)

### Battery Owners Manual

#### Battery Packs Covered

12V96Ah	24V72Ah	36V72Ah	48V72Ah
12V144Ah	24V144Ah	36V105Ah	48V105Ah
12V216Ah	24V300Ah		48V160Ah
12V288Ah			48V320Ah
12V600Ah			

#### **WARNING!**

- Always wear safety glasses when working with any type of battery
- Do not short circuit the battery terminals
- Do not connect the battery terminals with reverse polarity
- Do not charge more than 1C or 175A max (C=amp hours of the battery pack)
- Do not continuously discharge more than 1C or 175A max (C=amp hours of the battery pack)
- Do not momentarily discharge more than 600A for 3 seconds
- Do not momentarily discharge more than 300A for 30 seconds
- Do not open the battery pack for any reason, there is a risk of electric shock.
- Do not connect batteries in series to obtain a higher voltage pack.
- Do not connect more than 3 batteries in parallel
- Only parallel connect battery packs of identical voltage, capacity, and age

#### **Storage**

Charge at least every six months

If storing unused for extended periods, disconnect loads and store at 50% state of charge

If storing unused for extended periods, store at room temperature

#### **Installation**

Make sure the battery pack voltage is correct for the application.

Do not connect with reverse polarity.

Always secure battery pack in place with mounting strap or battery hold down kit

Use only M8 or 5/16 ring terminals

Torque terminal bolts to 150-155 in/ft - Do not over tighten

If an inverter or DC-DC voltage converter will be used, connect battery terminals prior to connecting an inverter or converter. Terminal arc damage is not covered under warranty.

## Charging Method

The approved charging method for Eco Battery Lithium (LiFePo4) batteries is CC/CV (constant current/constant voltage). If your battery charger has an adjustable absorption setting, it should be set to 1 hour max. If your battery charger has an adjustable float setting, it should be set at 13.5V or off. Float charging above 13.5V will reduce the battery pack lifespan. Charging on a regular basis above the recommended charge rate will reduce the battery pack lifespan. Occasional charging at max rate will not significantly affect the lifespan of the battery pack.

### Charging voltages:

Battery Model	Bulk Recommended	Bulk Max	Float
All 12V Battery Packs	14.2V	4.6V (Max)	13.5V
All 24V Battery Packs	28.4V	29.2V (Max)	27.0V
All 36V Battery Packs	42.6V	43.8V (Max)	40.5V
All 48V Battery Packs	57.0V	58.4V (Max)	54.0V

### Charging & Discharging Recommended / Max Rates:

Battery Model	Recommended Charge Rate	Max Charge Rate
12V 96Ah	<48A	96A
12V 144Ah	<72A	144A
12V 216Ah	<108A	150A
12V 288Ah	<100A	175A
12V 600Ah	<100A	175A
24V 72Ah	<36A	72A
24V 144Ah	<72A	144A
24V 300Ah	<100A	150A
36V 72Ah	<36A	72A
36V 105Ah	<52A	105A
48V 72Ah	<36A	72A
48V 105Ah	<52A	105A
48V 160Ah	<80A	150A
48V 320Ah	<100A	150A

## Troubleshooting

Problem	Possible Causes	Remedy
Battery won't charge, but has voltage at terminals	Battery temperature is less than 34F	Warm the battery or wait until ambient temp rises above 34F
Battery won't discharge, but has voltage at terminals	BMS has been damaged due to short circuit or over current	Contact Eco Battery
No voltage at terminals	Battery is depleted	Charge Battery
	BMS is in protect mode due to short circuit, over current, or over voltage	Disconnect battery terminals For 1 minute, then re-connect
	BMS is in protect mode due to short circuit, over current, or over voltage	Contact Eco Battery

## Recycling

Many states now require the recycling of lithium ion batteries. Please check your state and local regulations to determine your specific recycling requirements. Do not dispose of your Lithium (LiFePO<sub>4</sub>) battery pack.

## Warranty

Eco Battery, LLC warrants each Eco Battery branded Lithium Iron Phosphate (LiFePO<sub>4</sub>) battery ("the Battery") sold by Eco Battery or any of its authorized distributors or dealers, to be free of manufacturers defects for a period of 8 years ("the Warranty Period") from the date of sale as determined by customer's sales receipt. Terms and conditions apply. See [www.ecobattery.com/warranty](http://www.ecobattery.com/warranty) for full warranty policy and exclusions.

**You must register your battery at [www.ecobattery.com/register](http://www.ecobattery.com/register) in order to receive full warranty coverage. Any battery not registered within 60 days from date of purchase shall be covered by the conditions of this warranty policy for a period of one (1) year from date of purchase.**

