

# ION BATTERY

by *Kessler*

The ultra-light weight ION Battery System features the new Lithium Iron Phosphate (LiFePO<sub>4</sub> or LFP) technology, which provides up to 4 times the life of other conventional battery systems. Lithium Iron Phosphate (LFP) is a special kind of lithium battery that addresses the 4 major issues with current lithium technologies: Safety, life, power, and environmental friendliness. Weighing in at only 2.4 lbs (4 lbs in case), this compact battery has a capacity of 9.6 amp hours making it the most powerful and longest lasting battery on the market for the weight.

- A) Power Input
- B) On/Off Switch
- C) Cigarette Style Inputs
- D) 4-Pin XLR Input
- E) Charge Button & Indicator



Lithium Iron Phosphate batteries have no thermal runaway and no poisonous chemicals, making them much safer than other conventional or lithium batteries. Because there are no heavy metals, this battery is clean, environmentally friendly, and recyclable. The ingredients are safe enough to be used as soil to grow plants.

Unlike conventional batteries, this long life solution can handle 2000+ charge cycles! Since it is Lithium Iron Phosphate, there is no charge “memory effect” so you can charge the battery whenever you want to. No need to worry about fully draining and cycling the battery every time. We have built in a smart battery charger with charge meter so you can easily top off the battery before an all-night excursion into the desert.

We’ve wrapped the battery in a weather proof padded case with built-in device storage and rain guard for when the weather gets rough. One female XLR plug and two female 12volt cigarette lighter plugs are built in for connection of up to three devices without the need of additional adapters.

If the battery reaches the end of its useful life, we can replace just the cells and get you back up and running at about half the cost of a new battery system.

## Charge Indicator

- Top Green LED 70-100% FULL
- Bottom Green LED 40-69% FULL
- Top Yellow LED 30-39% FULL
- Bottom Yellow LED 20-29% FULL
- Top Red LED 10-19% FULL
- Bottom Red LED 5-9% FULL
- Bottom Red LED blinking 0-5% FULL

## Charging the battery

1. Switch to Charge / Off when not powering a load or when charging.
2. When a charge cycle is started the LED's sweep through the full range twice and the last display is the version of code.
3. When charging the battery, the LED's indicate a charge level. Once the bottom green LED is lit during a charge, specific charge level information can be found by pressing the test button.
4. An upper green LED on solid indicates charging is in a voltage float mode and the battery is at 98% of its charge or above. After 30 minutes the top green LED will flash.
5. The upper green LED flashing indicates a full charge. Leaving the battery in this indefinitely drops the charge voltage to a safe "float" voltage level on the battery.
6. If a charge source is under powered the battery will try 4 times to use the under powered source. After that it will blink the bottom 2 red LED's to indicate a fault.
7. To clear the fault - remove the power source completely or switch to USE battery. While this test process is going on it will recycle like you just plugged in a power source and sweep the LED's and show version level each time it tries.
8. The ION battery charges from less than 5% to full in around 6 hours.

### **DO NOT CHARGE BATTERY AND USE AT THE SAME TIME**

9. The battery can charge from any source capable of 12-15VDC at 3.5A minimum. This provides a mobile charging option from a standard vehicle cigarette lighter socket.

## Tech Specs and Operating Suggestions

- **Battery Maintenance:** Battery should be charged every 3 months minimum in order to maintain full capacity.
- **Operating Temperature:** Battery use and charging is optimal at room temperature. (20-25C) Warmer environments will result in longer charge times.
- **Battery Monitor Reset:** The battery must be fully charged before the first use to reset the meter for best accuracy.
- **Battery Monitor Accuracy:** While the battery can deliver power at the full operating temperature range, the battery monitor is most accurate at room temperature. Monitor accuracy is degraded when driving light loads less than 100mA.
- **Low Voltage Protect:** When the battery gets low on voltage it will disconnect its output until the load has been removed.
- **Fault Mode:** The battery will flash two yellow LEDs during a fault. This fault could be the result of an inadequate charging supply source or recovery from a completely drained battery. If this happens the charge source should be unplugged, switch the battery to the “Use” position and then back to “Charge” and plug the charge source back in.

## Recommended Operating Conditions

- CONTINUOUS DISCHARGE (A):  $\leq 9.6$
- PULSE DISCHARGE (A) 30 SECONDS: 25
- CHARGE CURRENT (A):  $\leq 2$
- CHARGE VOLTAGE CUTOFF (V): 14.6
- DISCHARGE VOLTAGE CUTOFF (V): 10.0
- HIGH TEMP OPERATING TEMP (°C): 40
- LOW TEMP OPERATING TEMP (°C): -10

## Maximum Operating Conditions

- CONTINUOUS DISCHARGE (A):  $\leq 14$
- PULSE DISCHARGE (A)  $\leq 2$  SECONDS: 20
- CHARGE CURRENT (A):  $\leq 2$
- CHARGE VOLTAGE CUTOFF (V): 16.4
- DISCHARGE VOLTAGE CUTOFF (V): 8.0
- MAX MODULE IN SERIES: 2

## Constant Current Time Profile at 25°C

- 20 hours @ 0.48 A
- 2 hours @ 4.8 A
- 60 minutes @ 9.6 A