

The Model 6500 Lion Charger is designed to support 2 Li-Ion batteries simultaneously in the range from 1 to 5 Amp Hours of capacity each, with full charge pack voltages from 4.1 to 16.8 Volts. The Model 6500 has a power envelope available at the batteries during charging of 170 watts, and comes configured for a nominal C charge rate and a nine hour time out. The Model 6500 has the following basic operational characteristic.

1. **Stand-by Mode** - Before the battery is first connected to the charger, a voltage of 4.35 volts per cell is present on the charger's output pin. When a battery is connected that causes that voltage to drop to between 2 and 4.35 volts per cell, the charger acknowledges the presence of a battery, and charging begins.
2. **Charge Mode** - The Model 6500 delivers a pulse of approximately C rate to each battery for approximately 900 milliseconds. A wait period of 5 milliseconds is followed by a discharge pulse of 2.5C for 5 milliseconds. Another wait period of 95 milliseconds precedes a battery voltage measurement. If the voltage is below 4.1-4.2 volts per cell, another cycle is initiated.
3. **Charge Terminate**- Following the discharge pulse, and a wait time, a voltage measurement is made. If, during a period of 3 seconds or less, the voltage drops below a preset voltage per cell, typically 4.1-4.2 volts/cell, a cycle is reinitiated. If, after 3 seconds, the voltage still has not dropped below the preset voltage, the battery is considered fully charged, and the process is completed.

The following graphs illustrate how these functions are accomplished. The Model 6500 is charging a battery composed of four 3.8 AH Li-Ion cells in series, using a nominal C/2 charge rate. The first curve, **Fig 1**, shows a typical charge cycle from the Model 6500 as it brings the battery from full discharge to full charge.

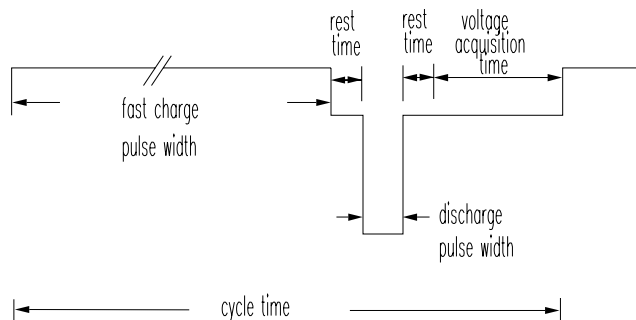


Figure 1



The second curve, **Fig 2**, shows the average current delivered to the battery.

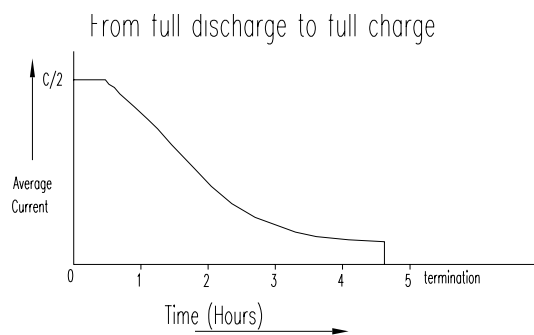


Figure 2

During the first minutes of the charge cycle, the Model 6500 supplies the battery a current of up to 5 amperes. This pulse is followed after approximately 5 milliseconds with a discharge pulse of 5 amperes. After a wait of approximately 95 milliseconds, a voltage measurement is then made. If the voltage is found to be less than the preset voltage per cell, another charge cycle is executed.

Two LED's provide a status report for each battery to the user of the charger's operations. Initially, with no battery present, no lights are on. When a battery is detected, the Red light comes on, meaning charging is in progress. When the charger has measured the voltage per cell to remain above the preset level for three seconds, the Green light will come on. The Green light will also illuminate if the time-out period occurs before full charge criteria is reached. If the charger measures a voltage at its output less than 3.8 volts per cell, and time-out has occurred, the Red light will blink, indicating an error condition. If the charger measures a battery voltage greater than 4.35 volts per cell, as would be the case if the battery were removed or the pack protect circuit opened, but before full charge was determined, the Red light will blink, indicating that the charge process failed.

SPECIFICATIONS

The Model 6500 is ideal for charging two batteries of 20 amp hour capacity or less, with a power envelope of 80 watts to each battery, and a maximum current out of 5 amps each. The instrument can be programmed from 20 milliamps to 5 amps, from 4.1 volts to 16.8 volts. The input voltage can vary from 95 to 265 VAC, 50 or 60 Hz.

	Model 6500 (each side)
Current Limit	5 Amps
Voltage Limit	4.1 - 16.8 Volts
Terminate wait time	3 seconds
Time limit	9 Hours
AC Voltage In	95-265 VAC
Frequency In	48-70 Hz
Max Power In	225 Watts

ORDERING INFORMATION

The Model 6500 can be configured when ordering using the following information:

PC-6500-NS/MA-4.P

N is the number of cells in series, M is the initial charge current in amperes, and P is the characteristic cell voltage, either .1 or .2.

Size:

8" Long, 5" Wide, 2.5" High

Construction:

Aluminum

Weight:

2.2 lbs., 1 Kg

Operating Temperature:

-30 to +50 Degrees C

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