



## **LITHIUM-ION 18650 PROTECTED BATTERIES, SET OF FOUR—MODEL 2.10**

Our batteries are manufactured in Japan by Panasonic-Sanyo and include a built-in protector designed by Seiko. The protection circuit prevents over discharge (activated at 2.45 VDC), over charge (activated at 4.92 VDC), and limits maximum to 10 Amps, far more than required by the Stealth Trap—Model 2014. The chemistry is the latest design using Li-Ion Hybrid technology. This battery in sets of four batteries held in the Li-ion battery case (PN: 1.40) requires a Li-ion battery charger like our Model 2.00; the charger outputs 3.4 Amps per hour at 8.4 VDC.

### **LITHIUM-ION BATTERY CASE—**

#### **MODEL 1.40**

The Lithium-Ion Battery Case, PN: 1.40 holds four Li-ion 18650 batteries; the configuration is a pair of two batteries in series giving an output of 8.4 VDC. The case is waterproofed (level IPX4) using a rubber O-ring. Three LED indicator lights show charge state of the batteries; when they flash it indicates the need to recharge. The case is protected against over-charge voltage with a cutoff of 8.4 VDC. It is also protected from over-discharge voltage and current of 5.0 VDC and 9.0 amps, respectively.



Figure 1. Lithium-Ion 18650 Protected Four-Cell Battery Holder, PN: 1.40.

### **LITHIUM-ION BATTERY CHARGER—**

#### **MODEL 2.00**

**Input:** 100-220 VAC, 50/60 Hz, 0.8 Amps. **Output:** 8.4 VDC, 3.2 Amps, Lithium Ion Chemistry

**Must be used ONLY with our Lithium-ion Protected Four-Cell Battery Holder, PN: 1.40**

**PLEASE READ** before using charger. Contact John W. Hock Company with any questions prior to operation (see footer for telephone and website or use email: Sales@JohnWHock.com).

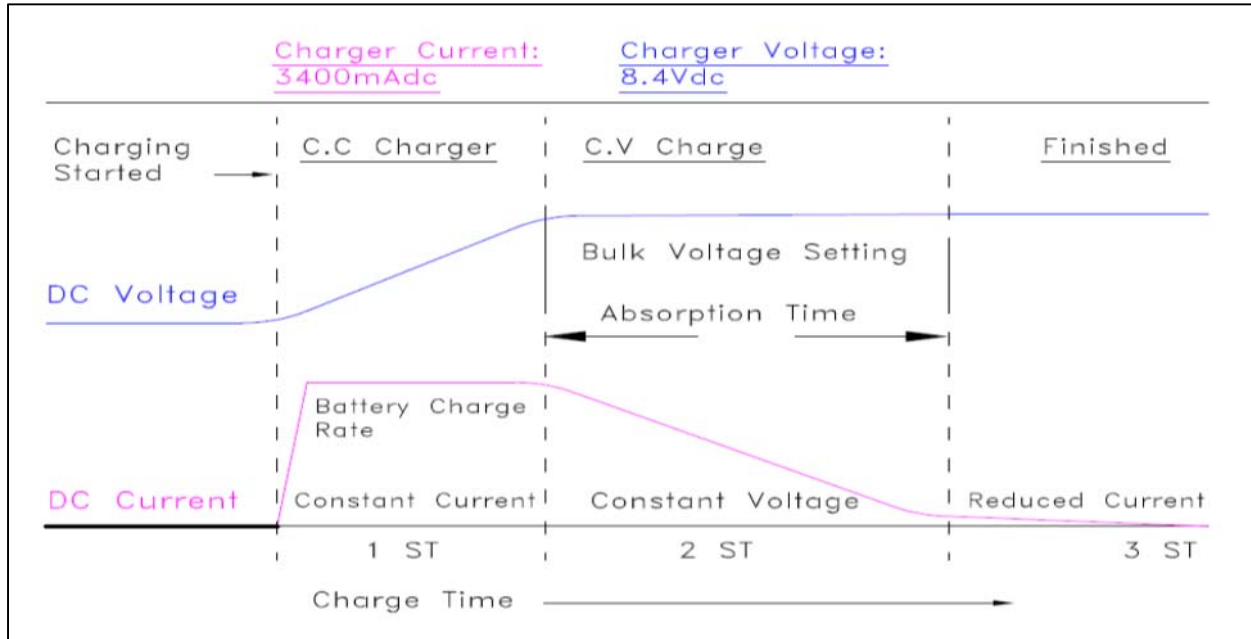
**Caution!** Safety precautions must be observed to avoid injury, electrical shock and/or fire!

1. This charger is designed to work **ONLY** with our Lithium-Ion Protected Four-Cell Battery Holder, PN: 1.40, with four 18650 Li-ion batteries (PN 2.10) installed with the correct polarity.
2. Before using the battery charger—please read all instructions and cautionary markings on the charger.
3. Use the battery charger in a well ventilated area—for indoor use only.

## ***Instructions for charging***

1. FIRST! With the charger switched off, plug the battery box female DC connector into the male DC connector of the charger. Make sure the battery box is switched off (no glowing green LEDs).
2. Be sure your battery is not drawing any load from equipment when you are charging.
3. Plug in the charger to the mains (100-220 VAC, 50/60 Hz) and then switch on the charger. The switch is on the end of the charger near the AC power cord.
4. LEDs underneath the fuse holder will illuminate to inform regarding the following:
  - a. The RED LED will indicate that the charger is switched on and connected to the mains.
  - b. If the battery is discharged, a YELLOW LED will illuminate indicating that charging is taking place. At this time the fan speed will be high. Voltage will be 8.4 VDC and amperage will be 3.2 Amps per hour.
  - c. When the second LED turns GREEN the battery is fully charged; charger puts out reduced voltage and current (see figure below). During the float charge phase, the battery will NOT harmed if left indefinitely. Fan speed will be at slow speed while the charger is in the float charge phase.
5. Shut off charger and disconnect the charger from the AC power source (mains).
6. Lastly, disconnect the charger from the battery box.
7. **Caution!**
  1. If the charger is not fully charging the battery check all physical wire connections.
  2. Check for bad battery or shorted battery cell.
  3. Check DC fuse under twist cap on front panel for continuity or damage Use correct replacement fuse: glass tube, fast acting, 5mmx 20mm, 250 V, 4.0 A. Note correct amperage of the fuse.
  4. **Caution!** Aged batteries or a battery with a shorted cell may not be able to reach full charge voltage. Charger will not discontinue bulk charging (Yellow LED) and switch to charged mode. Discontinue use of charger; have the battery checked.
  5. **Caution!** If the charger charges (Yellow LED) your battery for more than 6 hours without switching into charged mode (Green LED), turn the charger off. In this case you should have your battery checked. Over-time batteries will diminish their ability to receive a full charge.

## Charging curve



## Troubleshooting

Problem and Symptoms	Possible Reasons	Solution
If power RED LED indicator is off and no output voltage when connected to AC mains and charger is switched on:	<ol style="list-style-type: none"> <li>1. No AC input.</li> <li>2. Fuse blown.</li> <li>3. Charger malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check AC power.</li> <li>2. Replace fuse if blown (replace with 250 volt, 4.0 amp, 5 x 20 mm fast acting).</li> <li>3. Contact us.</li> </ol>
If AC power is normal. But charging LED is not ORANGE:	<ol style="list-style-type: none"> <li>1. Reversed polarity (will blow fuse).</li> <li>2. Loose fuse in holder.</li> <li>3. Charger malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace fuse.</li> <li>2. Tighten.</li> <li>3. Contact us.</li> </ol>
If AC power is normal. But charging LED remains ORANGE for a long time:	<ol style="list-style-type: none"> <li>1. Battery malfunction (may be in deep discharge condition).</li> <li>2. Charger malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the condition of the batteries.</li> <li>2. Contact us.</li> </ol>
If the charge rate LED goes immediately to GREEN:	<ol style="list-style-type: none"> <li>1. The battery is fully charged.</li> <li>2. Battery malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Great, battery is ready to use.</li> <li>2. Replace battery.</li> </ol>

Wednesday, April 26, 2017