CELECTRA™ 200W

► ► ► ► ► DC Multi-Chemistry Charger

INSTRUCTION MANUAL

(EFL3020)

✓	Included Items
	JST_XH Balance adapter
	JST_Thunderpower Balance adapter
	Banana plug to EC2 battery adapter
	Banana plug to EC3 battery adapter
	Banana plug to EC5 battery adapter
	Banana plug to JST battery adapter
	Banana plug to Futaba® battery adapter (with slot)
	Temperature sensor
	Shielded USB cable
	Alligator clips (2, red & black, banana plug input) for DC input cable
	PC charge analysis software disk
	Aluminum carrying case

Minimum computer requirements for use of included software: Microsoft® Windows XP® or Windows Vista® operating system, Compact disk (CD) reader capable of reading a mini-CD and USB 2.0 port. Microsoft®, Windows XP® and Windows Vista® are registered trademarks of the Microsoft Corporation.

Futaba is a registered trademark of Futaba Denshi Kogyo Kabushiki Kaisha Corporation of Japan.

The following features are standard on your Celectra 200W Multi-Chemistry DC Battery Charger:

- Li-Ion/Li-Po/Li-Fe battery cell count of 1 to 6 series cells
- Ni-Cd/Ni-MH battery cell count of 1 to 18 cells
- Pb battery voltage of 2 to 24V
- Built in 25W discharger
- Built in balance circuit
- Short-circuit, over-current, reverse polarity, low input voltage and over-temperature protection
- Storage and Fast charge modes
- User battery data, store and load up to 10 battery profiles
- A USB Communication link & supplied charge monitor software
- 2x16 backlit, blue LCD
- Attached DC input cable with inline RF filter
- Color coded, banana jack, power output terminals (Red = Positive, Black = Common)
- Internal cooling fan with grill cover
- Operating temperature range of 0°C to +50°C minimum
- Meets IP33CW, IK07 environmental specs

Specifications

The following specifications are standard on your Celectra 200W Multi-Chemistry DC Battery Charger:

- Input Voltage: 11-18VDC
- Charge Current: 0.10 to 10.0A (in 0.1 A increments / 200W maximum)
- Discharge Current: 0.10 to 5.0A (in 0.1 A increments / 25W maximum)
- Operating temperature: 0°C to +50°C
- Balance Current Drain: 300mA per cell
- Trickle Charge Current: 50 to 200mA
- Charging Mode: Peak (Ni-Cd/Ni-MH), CC/CV (Li-Po/Li-Ion/Li-Fe/Pb)

NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, Inc. For up-to-date product literature, visit horizonhobby.com and click on the support tab for this product.

Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.

CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not attempt disassembly, use with incompatible components or augment product in any way without the approval of Horizon Hobby, Inc. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

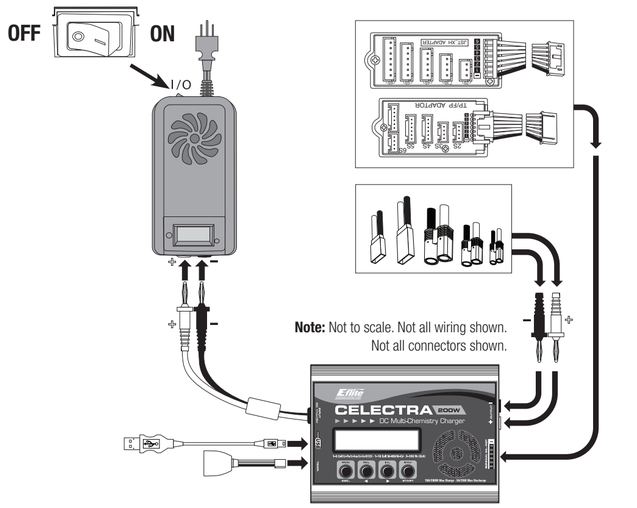
Safety Precautions and Warnings

WARNING: Failure to exercise caution while using this product and comply with the following warnings could result in product malfunction, electrical issues, excessive heat, FIRE, and ultimately injury and property damage.

- Never leave the power supply, charger and battery unattended during use.
- Never attempt to charge dead, damaged or wet battery packs.
- Never attempt to charge a battery pack containing different types of batteries.
- Never allow minors to charge battery packs.
- Never charge batteries in extremely hot or cold places or place in direct sunlight.
- Never charge a battery if the cable has been pinched or shorted.
- Never connect more than one battery pack to this charger at a time.
- Never connect the charger if the power cable has been pinched or shorted.
- Never connect the charger to an automobile 12V battery while the vehicle is running.
- Never attempt to dismantle the charger or use a damaged charger.
- Never reverse the positive and negative terminals.
- Never connect the input jack (DC input) to AC power.
- Always use only rechargeable batteries designed for use with this type of charger.
- Always inspect the battery before charging.
- Always keep the battery away from any material that could be affected by heat.
- Always monitor the charging area and have a fire extinguisher available at all times.
- Always end the charging process if the battery becomes hot to the touch or starts to change form (swell) during the charge process.
- Always connect the charge cable to the charger first, then connect the battery to avoid short circuit between the charge leads. Reverse the sequence when disconnecting.
- Always connect the positive red leads (+) and negative black leads (-) correctly.
- Always disconnect the battery after charging, and let the charger cool between charges.
- Always terminate all processes and contact Horizon Hobby if the product malfunctions.

WARNING: Never leave charger unattended, exceed maximum charge rate, charge with non-approved batteries or charge batteries in the wrong mode. Failure to comply may result in excessive heat, fire and serious injury.

CAUTION: Always ensure the battery you are charging meets the specifications of this charger and that the charger settings are correct. Not doing so can result in excessive heat and other related product malfunctions, which can lead to user injury or property damage. Please contact Horizon Hobby or an authorized retailer with compatibility questions.



GETTING STARTED

1. Make sure the power supply's rocker switch side marked with a circle (O) is pushed in, which is OFF.
2. Attach the banana plugs of your charger's DC power input cable to the power supply's banana plug jacks. Make sure you put the positive (+) red cable in the red (+) jack. Make sure you put the black common or negative (-) cable in the black (-) jack.

NOTICE: Always connect cable polarities correctly.

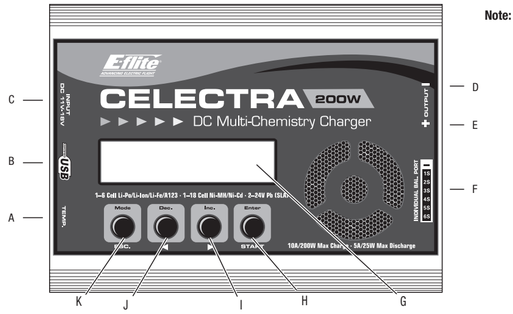
3. Attach the AC power cord to the power supply. Make sure the cord plug is full seated in the socket, then connect the AC power cord to an appropriate power socket.

NOTICE: Always consult 12V battery collateral materials or Horizon Hobby before using with sources other than standard AC wall outlet.

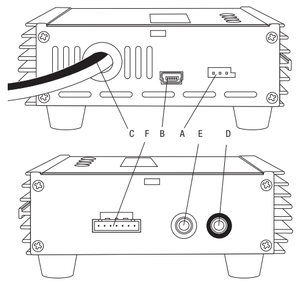
4. Push in the rocker switch side marked with a vertical line (I) to power on the power supply and charger. When powered on, the charger's power indicator LED glows red and the internal cooling fan turns. When the charger is powered on, a message will appear on the LCD screen.

CAUTION: Always power on the charger before connecting a battery to the charger, or damage to the charger and the battery can result.

1. Connect charger to power supply.
2. Connect charger's power supply to power source.
3. Power on the charger's power supply.
4. Make program selections in the charger for battery charging.
5. Connect charger adapters to charger.
6. Connect battery to charger adapters (connect main charging connectors before connecting cell-balancing connectors, where used).
7. Start battery charging.



Note: Not to scale. Not all wiring shown. Not all connectors shown.

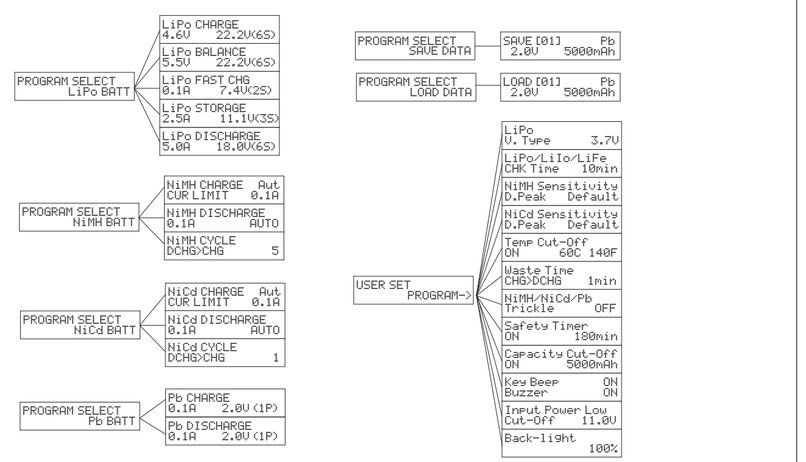


Look at the charger to see:

A. Temperature connection
B. USB port
C. Black and red power input cords
D. Power output port black (-)
E. Power output red (+)
F. Battery balancing port (F)
G. LCD screen (G)
H. Enter/START key
I. Inc/> key
J. Dec/< key
K. Mode/Esc key

PROGRAMMING GUIDE

Press the Mode key (K) to change among main menu screens or to get to these main menu screens from a submenu screen.
Press the Enter key (H) to get to submenus for adjusting operating parameters, to save value changes, or to start chosen battery charging actions.
Press the Dec (J) or Inc (I) keys to change between submenu screens or to change (Decrease or Increase) screen values.



OPERATING YOUR CHARGER

SELF TEST AND PROGRAM SELECT SCREENS

When the charger is powered on, there is a series of self tests and the screen will show the charger brand name and model number. After self tests, the charger shows another screen (information may vary).

```
CELECTRA
EFLC3020
```

Press Mode key to change among 7 main menu screens.

```
PROGRAM SELECT
      LiPo BATT
```

LITHIUM BATTERIES

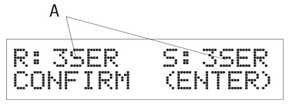
Press Mode key to change among 7 main menu screens and go to PROGRAM SELECT Li-Ion (or Li-Fe) BATT screen. This is the menu in which you set the standard Lithium battery charge parameters.

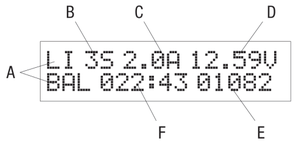
NOTE: The Lithium battery type (Li-Po, Li-Ion or Li-Fe) chosen at USER SET setup shows on this screen. Change Lithium battery type as needed in the USER SET menu (Li V. TYPE screen).

```
LiPo CHARGE
4.6A    22.2V(6S)
```

LITHIUM BATTERY CHARGING

Press Dec or Inc key to go to one of the control screens (CHARGE, BALANCE, FAST CHG, STORAGE or DISCHARGE) to do what your battery needs. Correctly connect your lithium battery to the charger (charging connector first and balancing connector second). Press the Enter key and adjust charging parameters as needed. Press and hold the Enter key (approximately 3 seconds) until the screen changes to start the battery check / charge sequence. When the charge cycle starts, the charger compares the battery to charger settings. The screen will show battery and your setting information. If the information after R: (charger) and S: (settings) (item A) does not match, press the Mode key and change lithium battery charging parameters as needed. If the R: information matches S:, press the Enter key to confirm. After confirmation, charging starts and information will show on the LCD screen (information may vary) (see lettered items below).





A. A Li-Po battery pack is balance charging LI BAL
B. Battery pack has 3 cells in series 3S
C. Charging rate is 2.0A (2000mAh)
D. Voltage being applied to the battery is currently 12.59V
E. Present charge level of the battery is 1082mAh
F. Time elapsed since the charge process started is 22:43 (22 minutes and 43 seconds)

During charging, the Dec key can be pressed to show several parameter messages on the LCD screen including: End Voltage, Capacity Cut-off, Safety Timer setting, Temperature Cut-off and Input Power Voltage. Press INC to see charge for each cell and DEC to return to the Charge Monitor screen. The charger signals when the charging (or discharging) process is complete (if Buzzer is set to ON).

```
4.20  4.20  4.20
0.00  0.00  0.00
```

CHARGING

CAUTION: The Li-Po / Li-Fe / Li-Ion (Li-Ion) charge program menus are to be used ONLY for the charging and discharging of Lithium battery packs. The charging of other battery types using the Li charge programs will result in damage to the battery and perhaps the charger.

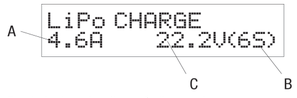
CAUTION: If at any time during the charge process the battery pack(s) become hot or begin to puff unplug the battery immediately and discontinue the charge process as batteries can cause fire, collateral damage and injuries.

Press Mode key to return to the main menu, then press the Mode key again until you see the PROGRAM SELECT Lithium battery screen.

NOTE: Make sure you the correct lithium battery type is shown for the battery you want to charge. If not correct change the setting for the lithium battery type in the USER SET menu (Li V. TYPE screen).

CAUTION: Also consider the battery pack's series cell count (i.e. 2S, 3S, 4S, etc.) as the voltage of the pack being charged will affect the available charge current in order to not exceed the 200 Watt maximum output limit of charger. Using a charge rate that is not compatible with the battery capacities may result in damage or malfunction of the charger or batteries.

Press Enter key to go to the CHARGE screen, for setting charging parameters. The charging amperage **(item A)** can be set between 0.1 and 10.0A. Voltage **(item C)** is dependent on the number of cells in series and Lithium battery type. For example, with Li-Po batteries these values can be from 3.7V (for 1S batteries) to 22.2V (for 6S batteries).



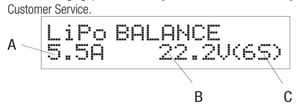
To select values other than default parameters:

- press Enter key so the charge current value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE the charge current value
- press Enter key again to save the value and pack voltage value **(item C)** flashes
- press Dec or Inc key to DECREASE or INCREASE pack voltage (and # of cells in series **(item B)**)
- press Enter key again to save the pack voltage value

If no parameters are flashing, you can press Dec or Inc key to select another program such as BALANCE, FAST CHG, STORAGE or DISCHARGE.

Balance Charging

This program menu is specifically designed for the balanced charging of Lithium batteries, including Li-Po, Li-Fe and Li-Ion battery packs. In balance charging each cell in the battery pack is monitored and charged to the same capacity and voltage levels, ensuring the optimum performance of the pack. Balance charging requires a battery with a balance adapter plug and a balance adapter board that has been designed for your charger and your battery. If you have any questions regarding balance charging, please contact your dealer or Horizon Hobby Customer Service.

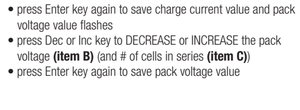


To select values other than the default parameters:

- press Enter key so charge current value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE charge current value
- press Enter key again to save charge current value and pack voltage value flashes
- press Dec or Inc key to DECREASE or INCREASE the pack voltage **(item B)** (and # of cells in series **(item C)**)
- press Enter key again to save pack voltage value

Fast Charge

Near the end of a standard charging cycle the charger switches from Constant Current (CC) mode to Constant Voltage (CV) mode to slowly "top off" the current in the battery pack as close as possible to the maximum capacity. In Fast Charge the CV mode is eliminated in order to greatly shorten the charging time; however, the final capacity of the battery will be less than what you would get using the standard charge method.

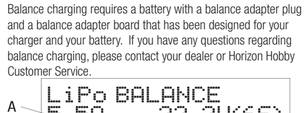


To select values other than the default parameters:

- press Enter key so charge current value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE the charge current value
- press Enter key again to save the charge current and the pack voltage **(item C)** flashes
- press Dec or Inc key to DECREASE or INCREASE pack voltage (and # of cells in series **(item B)**)
- press Enter key again to save the pack voltage value

Storage

If you don't plan on using your battery for a long time it is best to charge (or discharge) the battery to it's optimal storage voltage and capacity. These voltage values are different for Li-Po (3.85V), Li-Fe (3.3V) and Li-Ion (3.75V) battery packs. Using Storage charge the charger will automatically charge or discharge (depending on the current charge level) the battery to an appropriate level.

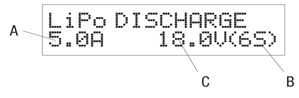


To select values other than the default parameters:

- press Enter key so charge current parameter **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE the charge current value
- press Enter key again to save the charge current and the pack voltage value **(item C)** flashes
- press Dec or Inc key to DECREASE or INCREASE the pack voltage value (and # of cells in series **(item B)**)
- press Enter key again to save the pack voltage value

Discharge

A battery pack's capacity can be verified by discharging the pack to its minimum voltage level and measuring the current as the pack is discharged.



To select values other than the default parameters:

- press Enter key so the charge current value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE the charge current value
- press Enter key again to save the charge current and pack voltage value **(item C)** flashes
- press Dec or Inc key to DECREASE or INCREASE pack voltage (and # of cells in series **(item B)**)
- press Enter key again to save the pack voltage value

Press DEC or INC key to go to one of the lithium battery charging operation screens listed above.

Ni-MH BATTERIES

```
PROGRAM SELECT
      NiMH BATT
```

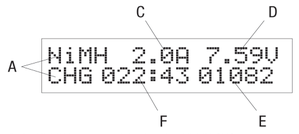
Press Mode key to change among 7 main menu screens and go to PROGRAM SELECT Ni-MH BATT screen. This is the menu in which you set the standard Ni-MH charge parameters.

NOTE: Change other Ni-MH battery settings as needed in other sub-menus under the USER SET menu.

CAUTION: The Ni-MH charge program menus are to be used ONLY for the charging and discharging of Ni-MH battery packs. The charging of other battery types using the Ni-MH charge programs will result in damage to the battery and perhaps the charger.

Ni-MH BATTERY CHARGING

Press Dec or Inc key to go to one of the control screens: CHARGE, DISCHARGE or CYCLE. Go to a screen for the operation your battery needs. Correctly connect your NiMH battery to the charging connectors of the charger. Press the Enter key and adjust charging parameters as needed. Start the operation by pressing and holding the Enter key until the screen changes and the battery check/charge sequence begins (after approximately 3 seconds). Once a charge (or discharge) cycle has been started, the charger will check the battery and if all is well, charging will begin. Information will show on the LCD screen (information may vary).

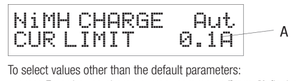


A. An Ni-MH battery pack is charging Ni-MH CHG
B. No cell count on Ni-MH batteries
C. Charging rate is 2.0A (2000mAh)
D. Voltage being applied to the battery is currently 7.59V
E. Present charge level of the battery is 1082 mAh
F. Time elapsed since the charge process started is 22:43 (22 minutes and 43 seconds)

During the charging process press the Dec key to see parameter messages on the screen including: End Voltage, Capacity Cut-off, Safety Timer setting, Temperature Cut-off and Input Power Voltage. The charger signals when the charging (or discharging) process is complete (if Buzzer is set to ON).

Charge

Press the Enter key to go to Ni-MH CHARGE screen to set the standard Ni-MH charge parameters.

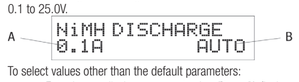


To select values other than the default parameters:

- press Enter key so charge current parameter **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE charge current value
- press Enter key again to save the charge current value

Discharge

Press the Inc key to go to the NIMH DISCHARGE screen. A battery pack's capacity can be verified by discharging the pack to its minimum voltage level and measuring the current as the pack is discharged. Discharge level can be set for AUTO or from 0.1 to 25.0V.

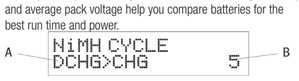


To select values other than the default parameters:

- press Enter key so discharge current value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE discharge current
- press Enter key again to save the discharge current and the discharge voltage value **(item B)** flashes
- press Dec or Inc key to DECREASE or INCREASE discharge voltage level
- press Enter key again to save the voltage value

Cycle

Press Inc key to go to Ni-MH CYCLE screen. The battery pack can be put through a series of charge/discharge cycles using this program. Discharging/cycling Ni-MH packs can increase capacity and rejuvenate neglected batteries. Discharge capacity and average pack voltage help you compare batteries for the best run time and power.



To select values other than the default parameters:

- press Enter key so the cycle type **(item A)** flashes
- press Dec or Inc keys to set the cycle type as CHG>DCHG or DCHG>CHG
- press Enter key again to save your choice and the number of cycles **(item B)** flashes
- press the Dec or Inc key to DECREASE or INCREASE the cycle count between 1 to 5
- press the Enter key again to save the cycle count value

The charger signals when the charging (or discharging) process is complete (if Buzzer is set to ON). Press DEC or INC key to go to one of the NiMH battery charging operation screens listed above.

Ni-Cd BATTERIES

Press Mode key to change among 7 main menu screens and go to PROGRAM SELECT Ni-Cd BATT screen. This is the menu in which you set the standard Ni-Cd battery charge parameters.

```
PROGRAM SELECT
      NiCd BATT
```

NOTE: Change some Ni-Cd battery charging settings as needed in the USER SET menu.

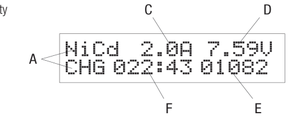
CAUTION: The Ni-Cd charge program menus are to be used ONLY for the charging and discharging of Ni-Cd battery packs. Charging other battery types using the Ni-Cd charge programs will damage the battery and can damage the charger.

Ni-Cd BATTERY CHARGING



Press the Dec or Inc keys to select one of the Ni-Cd charge programs such as CHARGE, DISCHARGE or CYCLE.

Connect your battery appropriately. Press the Enter key and adjust charging parameters as needed. Press and hold the Enter key (approximately 3 seconds) until the screen changes and the battery check/charge sequence begins. Once a charge (or discharge) cycle has been started, the charger will check the battery and if all is well, charging will begin. Information will show on the LCD screen (information may vary):

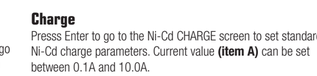


A. A Ni-Cd battery pack is charging Ni-Cd CHG
B. No cell count on Ni-Cd batteries
C. Charging at a rate of 2.0A (2000mAh)
D. Voltage being applied to the battery is currently 7.59V
E. Present charge level of the battery is 1082mAh
F. Time elapsed since the charge process started is 22:43 (22 minutes and 43 seconds)

During the charging process press Dec key to see several parameter messages on the LCD screen including: End Voltage, Capacity Cut-off, Safety Timer setting, Temperature Cut-off and Input Power Voltage. The charger signals when the charging (or discharging) process is complete (if Buzzer is set to ON).

Charge

Presss Enter to go to the Ni-Cd CHARGE screen to set standard Ni-Cd charge parameters. Current value **(item A)** can be set between 0.1A and 10.0A.



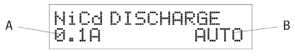
To select values other than the default parameters:

- press Enter key so the charge current parameter flashes
- press Dec or Inc key to DECREASE or INCREASE charge current value
- press Enter key again to save the charge current

Discharge

Press the Inc key to go to the Ni-Cd CHARGE screen to verify a battery packs capacity by discharging the pack to its minimum voltage level and measuring the current as the pack is discharged. Discharge current value can be set between 0.1A and 5.0A. Discharge voltage value can be set for AUTO or from 0.1V to 25.0V.

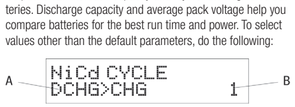
PLEASE TURN PAGE FOR MORE INFORMATION



To select values other than the default parameters:
- press Enter key so discharge current value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE discharge current value
- press Enter key again to save the discharge current and discharge voltage value **(item B)** flashes
- press Dec or Inc key to DECREASE or INCREASE discharge voltage level
- press Enter key again to save voltage value

Cycle

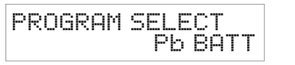
Press the Inc key to go to the Ni-Cd CYCLE screen to automatically run a battery pack through a series of charge/discharge cycles using this program. Discharging/cycling Ni-Cd packs can increase capacity and rejuvenate neglected batteries. Discharge capacity and average pack voltage help you compare batteries for the best run time and power. To select values other than the default parameters, do the following:



- press Enter key so the cycle type **(item A)** flashes
- press Dec or Inc keys to set cycle type at CHG>DCHG or DCHG>CHG
- press Enter key again to save your choice and the cycle number **(item B)** flashes
- press Dec or Inc key to DECREASE or INCREASE the cycle number from 1 to 5
- press Enter key again to save the cycle count value

Press the Inc key to return to the Ni-Cd CHARGE screen.

Pb BATTERIES



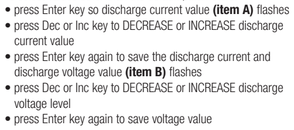
Press Mode key to change among 7 main menu screens and go to PROGRAM SELECT Pb BATT screen. This is the menu in which you set the standard Pb battery charge parameters.
NOTE: Change other Pb battery settings as needed in other sub-menus under the USER SET menu.

CAUTION: The Pb charge program menus are to be used ONLY for the charging and discharging of Pb (lead acid or sealed lead acid) battery packs. The charging of other battery types using the Pb charge programs will result in damage to the battery and perhaps the charger.

The nature of a Lead–Acid or Sealed Lead Acid battery is very different from that of Lithium, NiMH or Ni-Cd batteries. The output current of a Pb battery is lower than other batteries relative to their capacities. Furthermore, lead acid batteries can't be charged at a level greater than 1/10th their capacity. For example, a 5000mAh lead acid battery can't be charged at a rate greater than 0.5A. For more details on the charge and discharge capabilities of your battery please refer to charging data supplied by the battery manufacturer.

Pb BATTERY CHARGING

Press the Dec or Inc keys to select one of the Pb charge programs such as CHARGE or DISCHARGE. Connect your battery appropriately. Press the Enter key and adjust charging parameters as needed. Press and hold the Enter key (approximately 3 seconds) until the screen changes and the battery check/charge sequence begins. Once a charge (or discharge) cycle has been started, the charger will check the battery and if all is well, charging will begin.

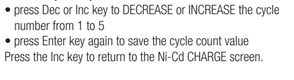


Information will show on the LCD screen (values vary):
A. A Lead Acid battery pack is charging Pb CHG
B. Battery pack has 6 cells in series - 6
C. Charging at a rate of 4.0A (4000mAh)
D. Voltage being applied to the battery is currently 12.39V
E. Present charge level of the battery is 1082mAh
F. Time elapsed since the charge process started is 22:43 (22 minutes and 43 seconds)

During the charging process press the Dec key to see several parameter messages on the screen including: End Voltage, Capacity Cut-off, Safety Timer setting, Temperature Cut-off and Input Power Voltage.
The charger signals when the charging (or discharging) process is complete (if Buzzer is set to ON).

Charge

Press Enter key to go to Pb CHARGE screen to set Pb battery charging parameters.



To select values other than the default parameters:
- press Enter key so the charge current value **(item A)** flashes
- press Dec or Inc keys to DECREASE or INCREASE charge current value
- press Enter key to save charge current value and battery voltage value **(item B)** flashes
- press Dec or Inc keys press Dec or Inc key to DECREASE or INCREASE battery voltage/cell count value (Pb batteries are 2.0V per cell, for a 6 cell pack this would be 2.0V x 6 cell = 12.0V)
- press Enter key to save the voltage

Discharge

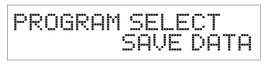
Press the Inc key to go to Pb DISCHARGE screen to verify a battery pack's capacity by discharging the pack to its minimum voltage level and measuring the current as the pack is discharged.



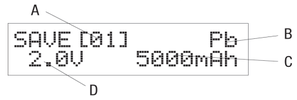
To select values other than the default parameters:
- press Enter key so the charge current value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE the charge current value
- press Enter key to save charge current value and the battery voltage value **(item B)** flashes
- press Dec or Inc keys to set the battery voltage / cell count value (Pb batteries are 2.0V per cell, for a 6-cell pack this would be 2.0V x 6 cell = 12.0V)
- press Enter key to save the battery voltage value

Press DEC or INC key to go to one of the Pb battery charging operation screens listed above.

SAVE DATA



Press Mode key to change among 7 main menu screens and go to PROGRAM SELECT SAVE DATA screen. Use this menu to save a battery profile. To reduce the time required to initiate a charging or discharging cycle on a battery you regularly use, this charger has been designed with the capabilities of storing up to 10 battery profiles (using the Save Data menu) that can be quickly accessed and run using the Load Data menu. If you have not previously entered a battery profile then press the Enter key to select battery profile 01 **(item A)**.



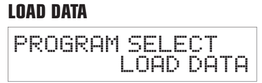
- press Enter key to save profile value so battery type **(item B)** flashes
- press Dec or Inc keys to select a battery type
- press Enter key to save the battery type and the pack voltage **(item D)** flashes
- press Dec or Inc keys to DECREASE or INCREASE voltage value
- press Enter key to save the value and the battery capacity **(item C)** flashes
- press Dec or Inc key to DECREASE or INCREASE battery capacity value
- press Enter key to save the value and the battery profile number [01] flashes
- Press and Hold Enter key for at least 3 seconds until the screen changes to the CHARGE menu

Set the CHARGE parameters you want saved in the battery profile. Refer to battery type parameter setting instructions for more information. Press Inc key to go to and set other battery parameters, such as BALANCE CHARGE, FAST CHARGE, STORAGE, DISCHARGE or CYCLE parameters needed for your battery profile. After setting all the parameters for your battery in the battery profile, press and hold the Enter key for at least 3 seconds until the screen shows SAVE...

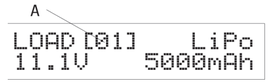


After the battery profile has been saved, the charger will return to the PROGRAM SELECT SAVE DATA screen.
Enter the Save Data menu and create more battery profiles or press Mode to go to other options.

LOAD DATA



Press Mode key to change among 7 main menu screens and go to PROGRAM SELECT LOAD DATA screen. Use this menu to load a saved battery profile. To reduce the time required to initiate a charging or discharging cycle on a battery you regularly use, this charger has been designed with the capabilities of storing up to 10 battery profiles (using the Save Data menu) that can be quickly accessed and run using the Load Data menu.



- Press Enter key to go to battery profile screen and the battery profile number [01] **(item A)** flashes.
- If you don't want to run profile [01], press Dec or Inc keys to DECREASE or INCREASE the battery profile value.
- When you have made your choice press and hold the Enter key until a screen for the battery type operation shows.
- The charge program for that battery profile will load and show on screen.
- Press the Dec or Inc key to select a battery charging cycle. When you have made your choice, press and hold the Enter key until the chosen cycle starts.

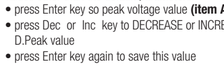
PROGRAM SELECT USER SET (12):



Press Mode key to change among 7 main menu screens and go to USER SET PROGRAM-> screen. Use this menu to set up programming as desired for charging your batteries. USER SET programming lets you change from default settings for "behind the scenes" operating parameters for this charger system. Adjust settings for use of the charger with Lithium (Li), Nickel (Ni) or Lead Acid (Pb) battery menus. At the USER SET PROGRAM-> screen, press Enter key to go to sub-menus. Press Inc key to change between sub-menu screens. Press Mode key to return to the main menu screen.

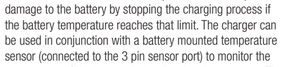
1. LITHIUM BATTERY TYPE

Use this menu to choose lithium battery type: Li-Po, Li-Io (lithium-Ion) or Li-Fe, which shows on other Lithium battery screens.
NOTE: The Lithium battery type (Li-Po, Li-Ion or Li-Fe) chosen at USER SET setup shows on this screen. Change Lithium battery type as needed.



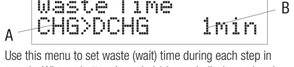
- Press Enter key again so 3.7V flashes.
- Press Dec or Inc key to choose among 3 options **(A)** (Changing voltage value changes lithium battery type): 3.7V for Li-Po, 3.6V for Li-Ion(Ion) and 3.3V for Li-Fe.
- Press Enter key to save your selection.

2. LITHIUM BATTERY CHECK TIME



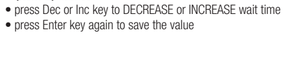
Use this menu to set a time limit on a lithium battery check. The battery charger can automatically identify the number of series cells in a Lithium battery pack. Normally this checking process is very quick, however, it will not work properly if the battery pack is damaged or over discharged. Very large capacity packs will also take longer to check. To prevent errors, the charger default is to spend up to 10 minutes to identify the number of cells. Time limit can be between 5 and 250 minutes. To select a value other than the default parameter of 10 minutes:
- press Enter key so time value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE time value
- press Enter key again to save this value

3. NIMH SENSITIVITY (PEAK VOLTAGE)



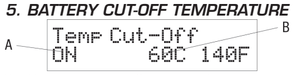
Use this menu to adjust the peak voltage level (D.Peak) at which charging stops for a NiMH battery pack. The D.Peak value is adjustable between 5mV/Cell and 20mV/Cell. Generally, 8mV/Cell is a good choice for NiMH batteries. When this value is set too high, a battery may be over-charged. When this value is set too low, the charger will not charge a battery to full capacity. To select a value other than the default parameter:
- press Enter key so value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE the D.peak value
- press Enter key again to save this value

4. NI-CD SENSITIVITY (PEAK VOLTAGE)



Use this menu to adjust peak voltage level (D.Peak) at which the charging stops for a Ni-Cd battery pack. The D.Peak value is adjustable between 5mV/Cell and 20mV/Cell. Generally, 10mV/Cell is a good choice for Ni-Cd batteries. When value is set too high, a battery will not be fully charged. To select values other than the default parameters:
- press Enter key so peak voltage value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE the D.Peak value
- press Enter key again to save this value

5. BATTERY CUT-OFF TEMPERATURE

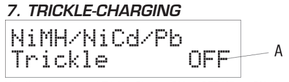


Use this menu to set a cut-off temperature that can prevent damage to the battery by stopping the charging process if the battery temperature reaches that limit. The charger can be used in conjunction with a battery mounted temperature sensor (connected to the 3 pin sensor port) to monitor the temperature of the battery during the charging process. The temperature can be set between 20 and 80C (68 to 176F). To select values other than the default parameter:
- press Enter key so ON or OFF **(item A)** flashes
- press Dec or Inc key to set cut-off at ON or OFF
- press Enter key again to save setting and temperature value **(item B)** flashes
- press Dec or Inc key to DECREASE or INCREASE temperature limit
- press Enter key again to save value

6. WASTE (BATTERY COOL-DOWN) TIME

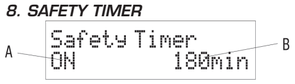
Use this menu to set waste (wait) time during each step in a cycle. When a battery is cycled (charged, discharged and charged again) it will get hot, therefore it is necessary to set a wait (or waste) time interval during each step of the process to make sure the battery and charger are completely cooled before moving on to the next part of the cycle. Default time is 1 minute, but this can be set between 0 and 60 minutes. To select values other than the default parameter:
- press Enter key so cycle CHG>DCHG or DCHG>CHG **(item A)** flashes
- press Dec or Inc key to set cycle
- press Enter key again to save setting and time value **(item B)** flashes
- press Dec or Inc key to DECREASE or INCREASE wait time
- press Enter key again to save the value

7. TRICKLE-CHARGING



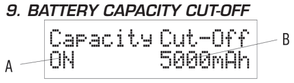
Use this menu to set Trickle Charge ON or OFF. When ON, the charge current can be adjusted between 50 and 200mA. To select values other than the default parameters:
- press Enter key so ON or OFF **(item A)** flashes
- press Dec or Inc key to set this function ON or OFF
- press Enter key again to save setting and charge value flashes
- press Dec or Inc key to DECREASE or INCREASE charge current value
- press Enter key again to save value

8. SAFETY TIMER



Use this menu to set a time on charging a battery. When a charge cycle is started, a clock inside the charger will begin recording the elapsed charge time. If the safety timer function has been turned ON, the charger will stop the charging process once this time limit has been reached to avoid damage caused by over charging the battery. This time value can be set between 10 and 720 minutes. To select values other than the default parameters:
- press Enter key so ON or OFF **(item A)** flashes
- press Dec or Inc keys to set safety time at ON or OFF
- press Enter key again to save this setting and time limit **(item B)** flashes
- press Dec or Inc key to DECREASE or INCREASE time limit
- press Enter key again to save value

9. BATTERY CAPACITY CUT-OFF



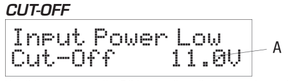
Use this menu to set a capacity limit on when the charger stops charging a battery. When a charge cycle starts, the charger records the battery capacity. When the capacity cut-off function is set at ON the charger will stop charging at the capacity limit to prevent battery damage. Capacity can be adjusted between 10 and 50,000mAh.
NOTICE: Also consider the battery pack's series cell count (i.e. 2S, 3S, 4S, etc.) as the voltage of the pack being charged will affect the available charge current in order to not exceed the 200 Watt maximum output limit of charger. Using a charge rate that is not compatible with the battery capacities may result in damage or malfunction of the charger or batteries. To select values other than the default parameters:
- press Enter key so ON or OFF **(item A)** flashes
- press Dec or Inc keys to set ON or OFF the capacity counter
- press Enter key again to save setting and capacity limit **(item B)** flashes
- press Dec or Inc key to DECREASE or INCREASE capacity limit
- press the Enter key again to save value setting

10. BEEP AND BUZZER SOUND CONTROL



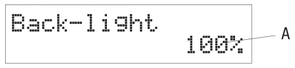
Use this menu to set the key beep and charger alarm buzzer at ON or OFF as needed. We recommend that you keep the alarm ON so the alarm will sound when charging is complete or if there is cause for alarm during charging. To select values other than the default parameters:
- press Enter key so ON or OFF **(item A)** flashes
- press Dec or Inc key to set the key beep at ON or OFF
- press Enter key again to save setting and ON or OFF **(item B)** flashes
- press Dec or Inc key to set buzzer at ON or OFF
- press Enter key again to save setting

11. INPUT POWER LOW VOLTAGE CUT-OFF



Use this menu to set the DC input voltage limit so an alarm will sound if the voltage goes below the cut-off value. The voltage alarm value can be set anywhere from 10.0 to 11.0V. To select a value other than the default parameter:
- press Enter key so voltage value **(item A)** flashes
- press Dec or Inc key to DECREASE or INCREASE cut-off voltage value
- press Enter key again to save value

12. BACK-LIGHT



Use this menu to set LCD screen intensity between 0 and 100% (default is 100%). To select values other than the default parameter:
- press Enter key so value **(item A)** fashes
- press Dec or Inc key to DECREASE or INCREASE value
- press Enter key again to save value

Battery Type						
	Li-Po	Li-Ion	Li-Fe	NiMH	Ni-Cd	Pb
Standard voltage (Volts per cell)	3.70	3.60	3.30	1.20	1.20	2.00
Maximum voltage (Volts per cell)	4.20	4.10	3.60	1.60	1.60	2.45
Minimum voltage (Volts per cell)	3.00	3.00	2.00	1.00	0.85	1.75

TROUBLESHOOTING GUIDE

LCD Screen Warning and Error messages shown below. During charger operation, circuits monitor battery and charger functions The following messages may show on the charger's LCD screen if you need to make the recommended responses. If the message continues after you respond as recommended, contact your nearest Horizon Hobby customer service center for assistance.

Message	Recommended Action
REVERSE POLARITY	Make sure each connection polarity is correct between power supply and charger, then between charger and battery
CONNECTION BREAK	Make sure power connections are correct for charging
SHORT ERR	Make sure there are no short circuits between the poles of the battery or the battery and the charger. Replace damaged wires.
INPUT VOL ERR	Input voltage to the charger went below the default or adjusted input voltage setting. Make sure power source for the charger provides correct input voltage.
VOL SELECT ERR	Incorrect setting for cell in series count (pack voltage) of a Li battery. Make charger settings match battery pack label cell in series count specifications or replace battery.
BREAK DOWN	Charger electronics require repair.
BATTERY CHECK LOW VOLTAGE	Battery voltage is lower than value setting in charger. Adjust settings, make sure battery is not damaged or replace battery.
BATTERY CHECK HIGH VOLTAGE	Battery voltage is higher than value setting in charger. Adjust settings, make sure battery is not damaged or replace battery.

WARRANTY AND REPAIR POLICY

Warranty Period
Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warranties that the Products purchased (the "Product") will be free from defects in materials and workmanship for a period of 1 year from the date of purchase by the Purchaser.
1 Year Limited Warranty
Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.
(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for all warranty claims.
(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.
(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any Product by Purchaser must be approved in writing by Horizon before shipment.
Damage Limits
HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.
If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.
Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

Warranty Services
Questions, Assistance, and Repairs
Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to product-support@horizonhobby.com, or call 877.504.0233 toll free to speak to a Product Support representative. You may also find information on our website at www.horizonhobby.com.
Inspection or Repairs
If this Product needs to be inspected or repaired, please use the Horizon Online Repair Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please Note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Repair Request is available at www.horizonhobby.com http://www.horizonhobby.com under the Repairs tab. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for repair. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.
Notice: Do not ship batteries to Horizon. If you have any issue with a battery, please contact the appropriate Horizon Product Support office.
Warranty Inspection and Repairs
To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon.
Non-Warranty Repairs
Should your repair not be covered by warranty the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for inspection or repair, you are agreeing to Horizon's Terms and Conditions found on our website under the Repairs tab.

WARRANTY AND SERVICE CONTACT INFORMATION

Country of Purchase	Horizon Hobby	Address	Phone Number / Email Address
United States of America	Horizon Service Center (Electronics and engines)	4105 Fieldstone Rd Champaign, Illinois, 61822 USA	877-504-0233 Online Repair Request: visit www.horizonhobby.com/repairs
	Horizon Product Support (All other products)	4105 Fieldstone Rd Champaign, Illinois, 61822 USA	877-504-0233 productsupport@horizonhobby.com
United Kingdom	Horizon Hobby Limited	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS, United Kingdom	+44 (0) 1279 641 097 sales@horizonhobby.co.uk
Germany	Horizon Technischer Service	Hamburger Str. 10 25335 Elmshorn, Germany	+49 4121 46199 66 service@horizonhobby.de
France	Horizon Hobby SAS	14 Rue Gustave Eiffel Zone d'Activité du Réveil Matin 91230 Montgeron	+33 (0) 1 60 47 44 70 infofrance@horizonhobby.com

PARTS CONTACT INFORMATION

Country of Purchase	Horizon Hobby	Address	Phone Number / Email Address
United States	Sales	4105 Fieldstone Rd Champaign, Illinois, 61822 USA	800-338-4639 sales@horizonhobby.com
United Kingdom	Horizon Hobby Limited	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS, United Kingdom	+44 (0) 1279 641 097 sales@horizonhobby.co.uk
Germany	Horizon Hobby GmbH	Hamburger Str. 10 25335 Elmshorn, Germany	+49 4121 46199 60 service@horizonhobby.de
France	Horizon Hobby SAS	14 Rue Gustave Eiffel Zone d'Activité du Réveil Matin 91230 Montgeron	+33 (0) 1 60 47 44 70 infofrance@horizonhobby.com

COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

Declaration of Conformity
(in accordance with ISO/IEC 17050-1)

CE No. HH2011022402

Product(s): EFL Celectra 200W DC Multi-Chemistry Battery Charger
Item Number(s): EFLC3020

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European EMC Directive 2004/108/EC and LVD Directive 2006/95/EC:

EN55022: 2006 +A1:2007
EN55024:1998+A1:2001+A2:2003
EN61000-3-2:2006+A1:2009+A2:2009
EN61000-3-3:2008
EN 60950-1:2006+A1:2010

Steven A. Hall
Vice President
International Operations and Risk Management
Horizon Hobby, Inc.

Signed for and on behalf of:
Horizon Hobby, Inc.
Champaign, IL USA
February 24, 2011

Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

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