HiTEC

POWER PEAK® E7 200 W

EQ-BID 12V/230V • PROFESSIONAL BALANCE CHARGER • DISCHARGER

Operating Instructions

Introduction

Thank you for purchasing the Power Peak® E7 EQ-BID automatic battery charger from Hitec, a high-performance 200 W charging / discharging station for the demanding modeler. With 200 watts of power and up to 20 amps of charge current in a single case, the Power Peak E7 charger has the ability to quickly charge or discharge your batteries on the move or at home. Despite being extremely easy to use, this charger is a sophisticated, high-quality unit which requires a certain level of knowledge from the user.

Please read this entire operating manual before using the Power Peak E7 charger. If you are unsure of its proper operation after reading the manual, please seek advice from an experienced hobbyist or someone familiar with proper battery charging procedures.

TABLE OF CONTENTS

WARNINGS and SAFETY NOTES

As with all Hitec products, please read the OPERATING INSTRUCTIONS, WARNING and SAFETY NOTES in their entirety before you attempt to use your new product.

Warning

THE CHARGING AND DISCHARGING OF RC HOBBY BATTERIES CAN BE DANGEROUS. FAILURE TO FOLLOW THESE EXPLICIT WARNINGS CAN RESULT IN PROPERTY DAMAGE AND LOSS OF LIFE.

- ⚠ **NEVER LEAVE YOUR CHARGER UNATTENDED WHILE IN OPERATION.**
- ⚠ **NEVER CHARGE ON OR AROUND COMBUSTIBLE MATERIALS.**
- ⚠ **NEVER CHARGE A DAMAGED BATTERY PACK.**
- ⚠ **LOW COST, NO-NAME BATTERY PACKS POSE THE MOST DANGER. WE RECOMMEND YOU ONLY USE BATTERY PACKS THAT ARE SOLD AND WARRANTIED BY A REPUTABLE COMPANY.**
- ⚠ **IT IS HIGHLY RECOMMENDED THAT YOU UTILIZE A SAFETY DEVICE SUCH AS A STEEL CASE OR LIPo SACK™ WHILE CHARGING LITHIUM CHEMISTRY BATTERIES.**
- ⚠ **IT IS HIGHLY RECOMMENDED THAT YOU KEEP AN OPERABLE "CLASS A" FIRE EXTINGUISHER IN THE CHARGING AREA.**

FAILURE TO FOLLOW THESE WARNINGS CAN BE CONSIDERED NEGLIGENCE BY THE OPERATOR AND MAY NEGATE ANY CLAIMS FOR DAMAGES INCURRED.

Hitec RCD USA will not be held responsible for any damages or injuries that may occur by persons who fail to follow these warnings or who fail to properly follow the instructions in this manual.

Warning

Tip

Note

Caution

PAY CLOSE ATTENTION TO THESE ICONS, THEY PROVIDE SPECIFIC INFORMATION IMPORTANT TO THE OPERATION OF YOUR CHARGER

Warning: Be sure to read this section for your own safety.

Caution: Be sure to read this section to prevent accidents and damage to your charger.

Tip: This section will help you maximize the performance of your charger.

Note: This section will provide more detailed explanations.

These warnings and safety notes are of the utmost importance. You must follow these instructions for maximum safety. Failure to do so can damage the charger and the battery and in the worst cases, may cause a fire.

Warning

NEVER LEAVE THE CHARGER UNATTENDED WHILE IT IS CONNECTED TO ITS POWER SOURCE. IF ANY MALFUNCTION IS FOUND, TERMINATE THE PROCESS AT ONCE AND REFER TO THE OPERATION MANUAL.

- ⚠ The allowable DC input voltage is 11-18V DC.
- ⚠ The allowable AC input voltage is 100-240V AC.
- ⚠ Keep the charger away from dust, moisture, rain, heat, direct sunlight and excessive vibration.
- ⚠ If the charger is dropped or suffers any type of impact, it should be inspected by an authorized service station before using it again.
- ⚠ This charger and the battery should be put on a heat-resistant, non-flammable and non-conductive surface.

WARNINGS and SAFETY NOTES (CONT.)

⚠ Never place a charger on a car seat, carpet or similar surface. Keep all flammable, volatile materials away from the operating area.

⚠ Make sure you know the specifications of the battery to be charged or discharged to ensure it meets the requirements of this charger. If the program is set up incorrectly, the battery and charger can be damaged.

⚠ Fire or explosion can occur due to overcharging.

⚠ To avoid a short circuit between the charge lead, always connect the charge cable to the charger first, then connect the battery. Reverse the sequence when disconnecting.

⚠ Never attempt to charge or discharge the following types of batteries:

- A battery fitted with an integral charge circuit or a protection circuit
- A battery pack which consists of different types of cells (including different manufacturer's cells)
- A battery that is already fully charged or just slightly discharged and non-rechargeable batteries (these pose an explosion hazard)
- A faulty or damaged battery
- Batteries installed in a device or which are electrically linked to other components
- Batteries that are not expressly stated by the manufacturer to be suitable for the currents the charger delivers during the charge process

PLEASE BEAR IN MIND THE FOLLOWING POINTS BEFORE YOU COMMENCE CHARGING:

- Did you select the appropriate program suitable for the type of battery you are charging?
- Did you set up the adequate current for charging or discharging?
- Have you checked the battery voltage? Lithium battery packs can be wired in parallel and in series, i.e. a 2-cell pack can be 3.7V (in parallel) or 7.4V (in series).
- Have you checked that all connections are firm and secure?
- Make sure there are no intermittent contacts at any point in the circuit.

Standard Battery Parameters

	LiPo	LiIon	LiFe	LiHV	NiCd	NiMH	Pb
Nominal Voltage	3.7V/cell	3.6V/cell	3.3V/cell	3.8V/cell	1.2V/cell	1.2V/cell	2.0V/cell
Max. Charge Voltage	4.2V/cell	4.1V/cell	3.6V/cell	4.35V/cell	1.5V/cell	1.5V/cell	2.46V/cell
Storage Voltage	3.8V/cell	3.7V/cell	3.3V/cell	3.85V/cell	n/a	n/a	n/a
Allowable Fast Charge	≤ 1C	≤ 1C	≤ 4C	≤ 1C	≤ 1-2C	≤ 1-2C	≤ .04C
Min. Discharge Voltage	3.0-3.3V/cell	2.9-3.2V/cell	2.6-2.9V/cell	3.1-3.4V/cell	0.1-1.1V/cell	0.1-1.1V/cell	3.0-3.3V/cell

Warning **WHEN ADJUSTING YOUR POWER PEAK E7 CHARGING PARAMETERS, BE SURE YOU SELECT THE PROPER BATTERY TYPE AND CELL VOLTAGE FOR THE TYPE OF CELL YOU ARE CHARGING. CHARGING BATTERIES WITH THE WRONG SETTINGS MAY CAUSE THE CELLS TO BURST, CATCH FIRE OR EXPLODE.**

WARNINGS and SAFETY NOTES (CONT.)

CHARGING

Before charging your batteries, it is critical that you determine the maximum allowable charge rate for your batteries. The Power Peak E7 is capable of charging at high rates that may not be suitable or safe for your particular batteries. For example, Lithium cells are typically safe to charge at 1C, or the total mAh ÷ 1000. A 1200 mAh battery would have a 1C charge rate of 1.2 amps. A 4200mAh battery would have a 1C charge rate of 4.2 amps. Some manufacturers are offering Lithium cells that can be charged at greater than 1C but this should ALWAYS be verified before charging a Lithium battery at rates higher than 1C. Voltage is just as critical as the charging amperage rate and this is determined by the number of cells in series, or “S”. For example, a 3S LiPo is rated at 11.1 volts (“S” multiplied by a single LiPo cell with a nominal voltage of 3.7 volts DC. 3 cells x 3.7 volts each equals 11.1 volts DC).

Connect the battery’s main leads to the charger output: red is positive and black is negative. Keep in mind that the gauge or thickness of your charging leads from the Power Peak E7 to your battery must be of an acceptable current rating to handle the applied charge current. For maximum safety and charging effectiveness, always match or exceed the main battery lead rating when assembling or selecting your charging leads. If you charge a battery at a high current rate (amperage) with a charging lead not rated for the chosen amperage, the wire could get hot, catch fire, short out and/or potentially destroy your battery and the charger. When in doubt, always use a higher gauge wire (lower AWG number). It is common to see charging leads constructed of 14AWG, 16AWG or 18AWG wire.

Always refer to recommendations from your battery manufacturer for your specific battery type and size before initiating a charge or discharge process.

Do not attempt to disassemble or modify Lithium or Lead-Acid battery packs.

DISCHARGING

The Power Peak E7 discharging functions are for two specific purposes:

- Refreshing the capacity of a Nickel-based battery that has lost capacity over time (NiMH or NiCd).
- Reducing the voltage of a Lithium battery for safe storage.

Note

LITHIUM CHEMISTRY BATTERY PACKS SHOULD ONLY BE DISCHARGED TO THEIR MINIMUM SAFE VOLTAGE, NO LOWER. DEEP DISCHARGING A LITHIUM CELL WILL DO PERMANENT DAMAGE. REFER TO THE STANDARD BATTERY PARAMETERS TABLE ON PAGE 6 OF THIS MANUAL FOR MINIMUM DISCHARGE VOLTAGES.

LiPo & LiHV Charge/Discharge Cycling

Lithium batteries are known to reach full capacity after a break-in period of about 10 charge/discharge cycles. We do not recommend you use the Power Peak E7 charger to do this; normal use and recharging will achieve the same results. If you wish to perform a Lithium break-in on the bench with the Power Peak E7, discharging to minimum acceptable voltages and performing a balance charge at 1C maximum rate is recommended. If you choose to break in your Lithium batteries under normal use, charging at only 1C for the first ten cycles will help ensure full performance and service life from your Lithium cells.

PRODUCT LAYOUT

SET CONTENTS

1. POWER PEAK E7 Charger
2. Power Cord
3. 2-7 Cell Balance Adaptor XH
4. 2-7 Cell Balance Adaptor EH
5. 2 Pin T-Type Charge Cable
6. XT60 Charge Cable
7. S-Type Charge Cable
8. Alligator Clips

SPECIFICATIONS

AC Input	100 - 240 Volts AC
DC Input	11 - 18 Volts DC
Charge Circuit Power	200 Watts
Charge Current Range	0.1 ~ 20.0 Amps
Discharge Current Power	36 Watts
Discharge Current Range	0.1 ~ 10.0 Amps
Current Drain for LiPo Balancing	200mA per cell
NiCd/NiMH Battery Cell Count	1 ~ 18 Cells
LiPo/LiFe/LiIon/LiHV Cell Count	1 ~ 7 Cells
Pb Battery Voltage	2 - 24 Volts
Net Weight	52.5 oz (1.5kg)
Dimensions	10.6 x 7.9 x 3.3 in
	(163 x 200 x 85mm)

FEATURES

POWER FEATURES

The Power Peak E7 features a 200 Watt charge circuit enabling the user to charge a single high capacity battery in very little time. The E7 also has a 5VDC 2.1 amp USB output for charging accessories such as a cell phone.

20 BATTERY MEMORIES PER CHANNEL

With the ability to store a maximum of 20 battery profiles, the E7 allows the user to store all of their battery's process settings making setup a breeze.

BATTERY IDENTIFICATION SYSTEM (BID) (Chips and Keys sold separately)

A very unique feature of the Power Peak E7 charger is Multiplex's patented Battery Identification system (BID). As the range of battery types becomes ever more diverse, each type of battery requires its own dedicated charging process. It is easy to set up the charger incorrectly for a specific type of battery, resulting in costly damage to the battery. The revolutionary BID system provides a solution to this problem by allowing the user to assign a small, lightweight BID chip or key which stores all the relevant data for charging and discharging the battery. When the BID chip or key is connected to the Power Peak E7, it defines the parameters for the charger. All you need to do is press the Start button, and the charge or discharge process commences. Since all the essential information is stored on the BID chip, the battery always carries its own data with it, and the data can easily be displayed on the charger. This function largely eliminates the necessity for PC software and computer technology in order to obtain an accurate overview of the state of the battery. At the same time, the large graphic screen provides a particularly convenient data display for the user.

INTERNAL INDEPENDENT LITHIUM BATTERY BALANCER

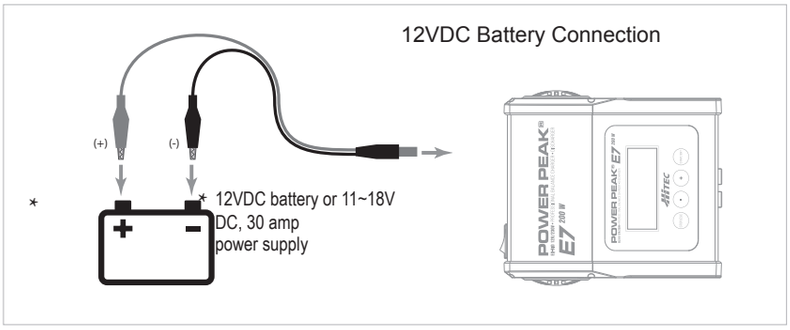
The E7 features a built-in cell voltage balancer so you don't need to fuss with external balancers while charging. When used with a balancing, connector, the E7 can monitor and balance each cell.

UPDATABLE FIRMWARE

With a mini USB socket, the firmware for the charger can easily be updated by the user at any time.

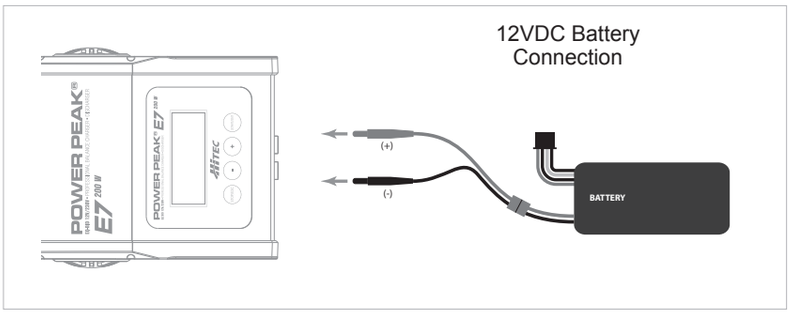
GETTING STARTED

BATTERY AND SUPPLY CONNECTIONS



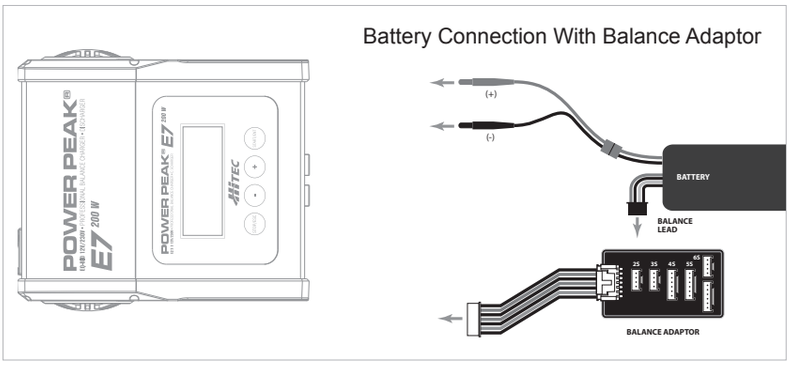
1. CONNECTING TO A POWER SOURCE

The Hitec Power Peak E7 features a built-in switching power supply. You can connect the AC power cord directly to an AC socket (100-240V AC) or use an 11-18V DC power source (such as an automotive battery or 12 Volt power supply).



2. CONNECTING TO THE BATTERY

To avoid short circuits between the banana plugs, always connect the charge leads to the charger first, and then to the battery second. When disconnecting the battery, always disconnect the battery from the charge lead first, and then remove the charge lead from the charger.



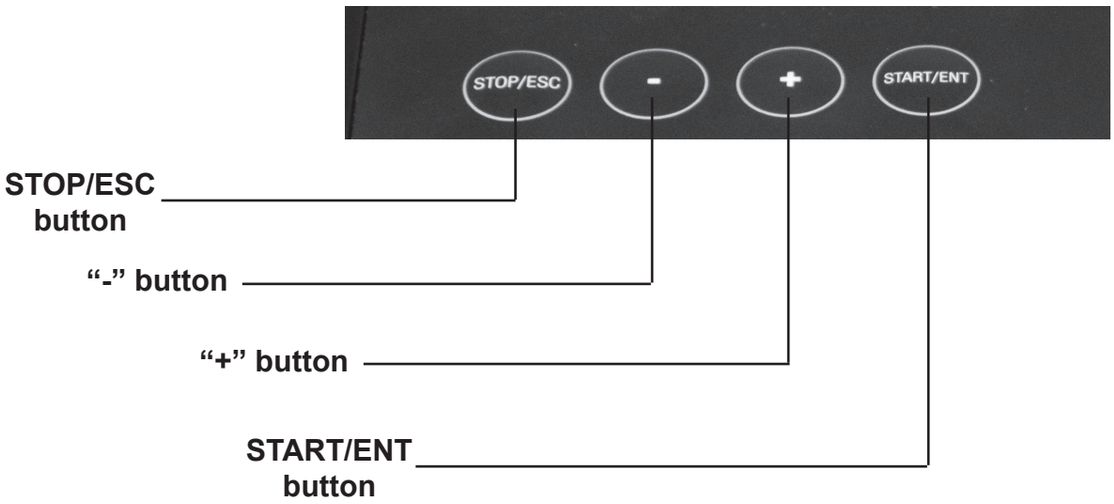
3. BALANCE SOCKET

If the battery has one the balance wires attached to the battery, it should always be connected to the charger, with the black wire aligned with the negative marking. Take care to maintain correct polarity.

Warning

FAILURE TO CONNECT AS SHOWN IN THIS DIAGRAM WILL DAMAGE YOUR CHARGER. TO AVOID A SHORT CIRCUIT BETWEEN THE CHARGE LEAD, ALWAYS CONNECT THE CHARGE CABLE TO THE CHARGER FIRST, THEN CONNECT THE BATTERY. REVERSE THE SEQUENCE WHEN DISCONNECTING.

OPERATIONS



STOP/ESC button

This button is used to stop a process or back out of a parameter setting, it is also used to scroll through the Battery Selection, User Settings, Data, and Cycle menus.

"+" button

This button is used to scroll down in the menus or to increase the value of a parameter. Pressing the button once increases a parameter by one increment, holding this button increases in greater increments.

"-" button

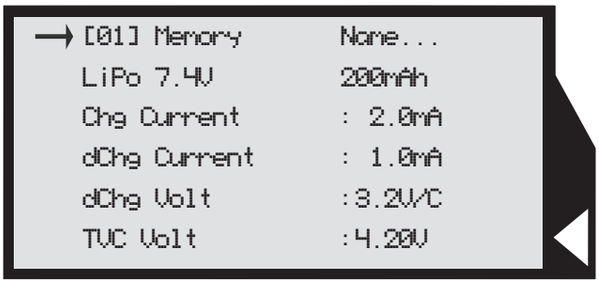
This button is used to scroll up in the menus or to decrease the value of a parameter. Pressing the button once decreases a parameter by one increment, holding this button decreases in greater increments.

START/ENT button

Pressing this button activates menu where the arrow is pointing. Pressing and holding this button takes you to the process menu. Once a process is selected, press the button again to start the process.

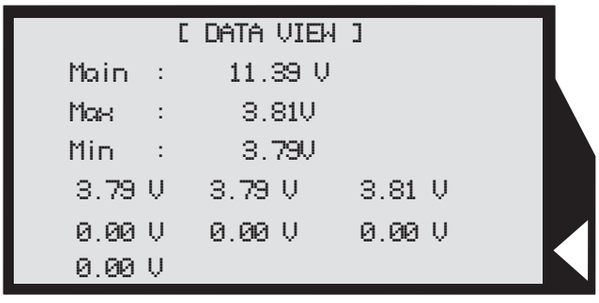
MENU STRUCTURE

Once plugged in, turn on the power switch, the charger briefly displays Hitec Power Peak E7 then the Memory screen appears. Use the STOP/ESC button to scroll through the menus.



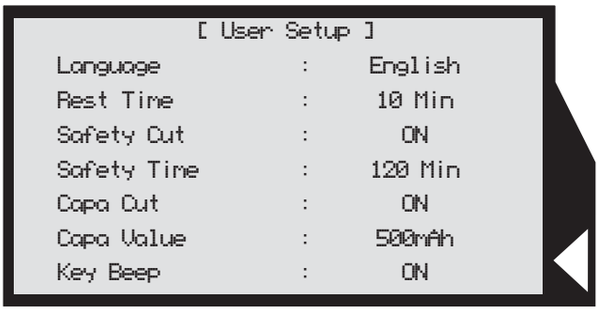
The Memory Name menu is where the parameters for charging or discharging batteries are defined. The corresponding settings are then stored in the memory (See Page 14 for setting process parameters).

STOP/ESC button



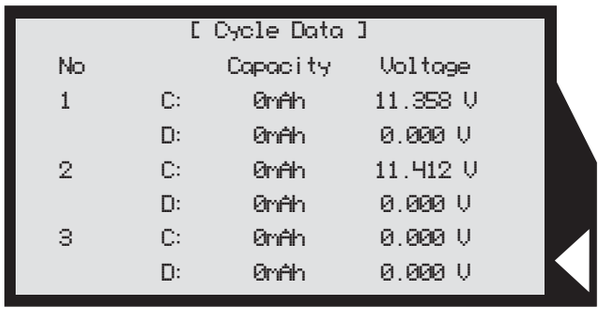
The Data View menu displays information pertaining to the charging and discharging processes of a Lithium chemistry battery. When a balancing cable is attached, the screen will also display the voltage of the individual cells as well as the highest and lowest cell value.

STOP/ESC button



The User Setup menu allows the user to customize certain features of the Power Peak E7 (See Page 14 for more information on the parameters and defaults).

STOP/ESC button

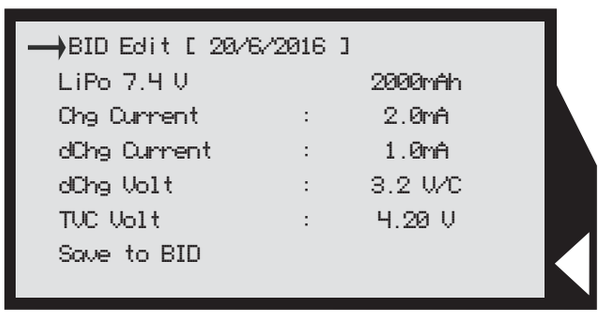


The Cycle Data display shows the charged-in and discharged capacity, as well as the maximum battery voltage reached during charging, and the average battery voltage during discharging of all completed cycles. Data for up to ten cycles can be viewed; the cycle is selected using the “+” or “-” buttons. Recorded data can only be viewed at the end of a cycle. To erase the data, either switch the charger off or connect a new battery.

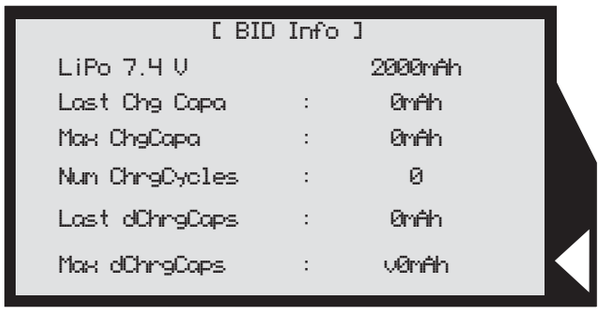
C: = Charge D: = Discharge

Note

IF A BID CHIP OR BID KEY IS CONNECTED TO THE CHARGER, THE MEMORY NAME AND CYCLE DATA MENUS ARE REPLACED BY THE BID EDIT AND BID INFO MENUS RESPECTIVELY.



The BID Edit menu is where the parameters for charging or discharging batteries are defined. The corresponding settings are then stored on the BID chip or key
(See Page 20 for working with the BID system).



On the BID Info menu, if a system is connected to either channel, the data stored on the chip is displayed on-screen. You can scroll through the data stored on the BID chip or key by pressing the + or - buttons.

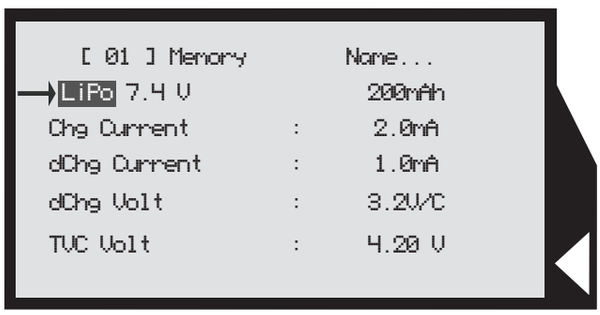
After connecting the battery, you are now ready to setup the charger to charge your specific type of battery. When the charger is first powered on, the Memory Name menu will be displayed. The default mode of the charger is set for a 2 Cell 2000 mAh Lithium Polymer battery. If this is not the battery you plan on working with, then you will need to make changes to the operation programming based on the following instruction.

OPERATING THE CHARGER

Warning **BEFORE SELECTING A PARAMETER OPERATION, IT IS CRITICAL THAT YOU KNOW THE TYPE OF BATTERY YOU ARE WORKING WITH AND WHAT THE MANUFACTURER RECOMMENDATIONS ARE FOR CHARGING OR DISCHARGING. FAILURE TO FOLLOW THE MANUFACTURER'S RECOMMENDATIONS CAN RESULT IN DAMAGE TO THE BATTERY**

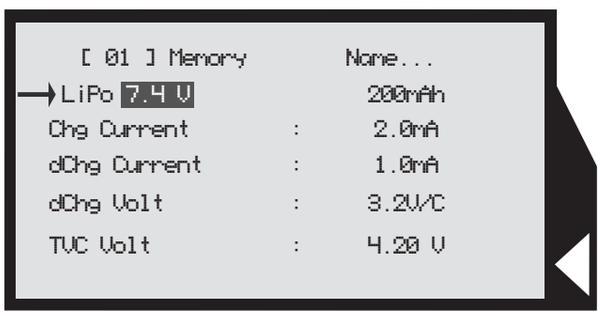
The following is a step-by-step guide for setting the battery parameters on the Power Peak E7. The screen shots and operation templates shown are for the operation of a Li-Po BALANCE CHARGE program.
Refer to the **Available Operations** chart on page 15 to setup your specific type of battery.

Whenever a parameter value in the program needs to be adjusted, scroll to it using the + or – buttons. Highlight the value by pressing the START/ENT button; to change the value press the + or - buttons. The new value will be stored by re-pressing the START/Enter button.



BATTERY SELECT

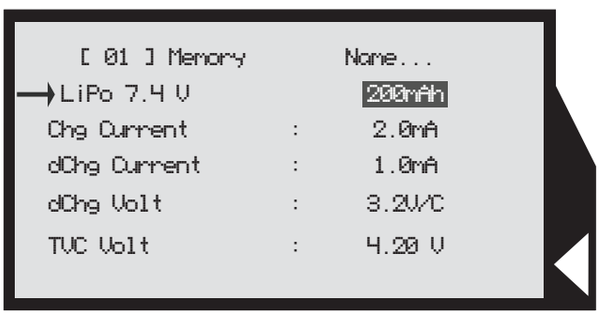
With the arrow pointing to the battery parameters, press START/ENT to highlight the battery type. Use the + or – to cycle through the battery types, once you have selected the battery type that you are working with, press START/ENT to confirm and move onto the battery voltage prompt.



VOLTAGE SELECT

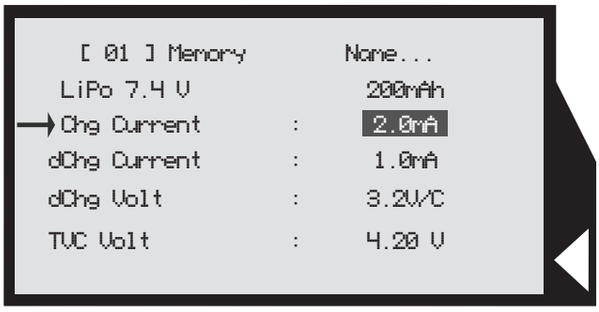
With the voltage value highlighted, use the + or – to increase or decrease the voltage to match your battery's voltage. Press START/ENT to confirm and move onto the Battery Capacity prompt.

Note **THE VOLTAGE WILL INCREASE IN VALUE BASED ON THE NOMINAL VOLTAGE OF A SINGLE CELL.**



CAPACITY SELECT

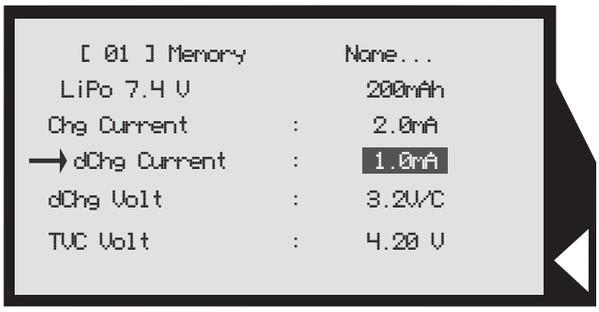
With the capacity value highlighted, use the + or – to increase or decrease the capacity to match your battery's capacity. Press START/ENT to confirm. Now is a good time to check to make sure the settings match that of your battery.



CHARGE CURRENT (Chg Current)

Press the + button to move the arrow to the charge current prompt. Press the START/ENT button to highlight the value prompt. Use + or – to increase or decrease the charge current. Press START/ENT to confirm.

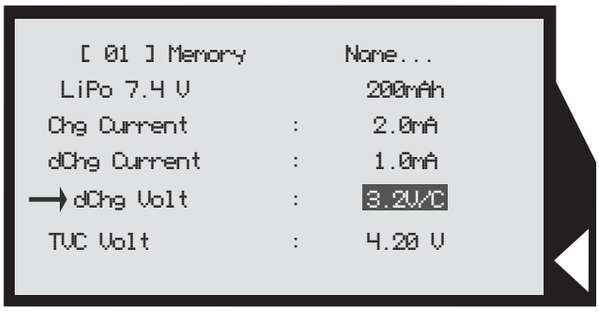
Warning **NEVER EXCEED THE DISCHARGE CURRENT RECOMMENDED BY YOUR BATTERY'S MANUFACTURER.**



DISCHARGE CURRENT (dChrg Current)

Press the + button to move the arrow to the dChg charge current prompt. Press the START/ENT button to highlight the value prompt. Use + or – to increase or decrease the charge current. Press START/ENT to confirm.

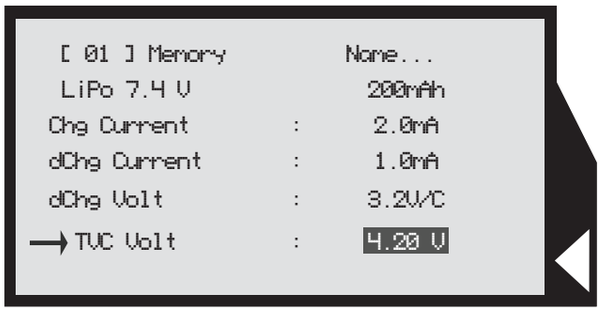
Warning **NEVER EXCEED THE DISCHARGE CURRENT RECOMMENDED BY YOUR BATTERY'S MANUFACTURER.**



DISCHARGE VOLTAGE (dChg Volt)

This is used to set the end voltage during the discharge process, the value is set per cell. Press the + button` to move the arrow to the discharge voltage prompt.
Press the START/ENT button to highlight the value prompt. Use + or – to increase or decrease the discharge voltage. Press START/ENT to confirm.

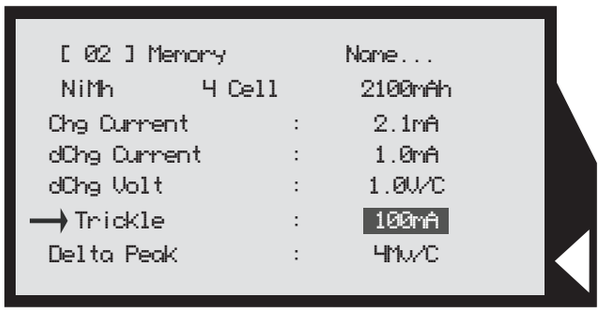
Warning **SETTING A DISCHARGE VALUE LOWER THAN WHAT IS RECOMMENDED IN THE CHART ON PAGE 14 CAN PERMANENTLY DAMAGE YOUR BATTERY.**



TERMINAL VOLTAGE CONTROL (TVC)

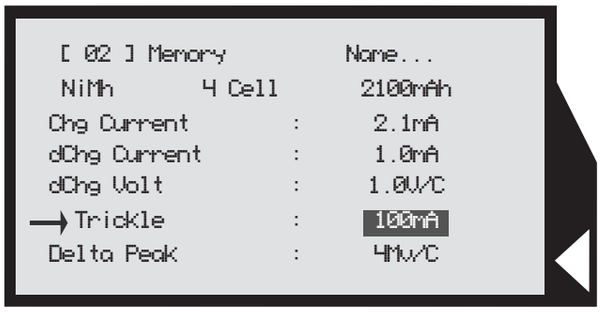
This is used to set the upper voltage limit during the charge process, the value is set per cell. Press the + button to move the arrow to the discharge voltage prompt. Press the START/ENT button to highlight the value prompt. Use + or – to increase or decrease the discharge voltage.
Press START/ENT to confirm.

Warning **SETTING A TVC VALUE HIGHER THAN WHAT IS RECOMMENDED BY YOUR BATTERY'S MANUFACTURER CAN PERMANENTLY DAMAGE YOUR BATTERY.**



TRICKLE CHARGE RATE

When the charge process ends, current is fed to the battery to compensate for the natural discharge. This feature is used to set the trickle current rate. The function can be turned OFF or adjusted between 50 to 300mA.



DELTA PEAK SETTING

The automatic charge program utilizes Delta Peak voltage detection. When the battery's voltage exceeds the threshold, the charge process is terminated automatically.
The Delta Peak value adjustable range is 3mV/Cell to 15mV/C. We recommend you use 10mV/Cell on a NiMH battery and 15mV/Cell on a NiCd battery.

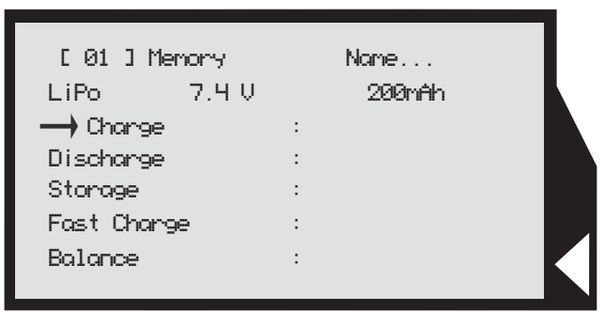
STARTING THE CHARGE / DISCHARGE PROCESS

Once all the parameters are set, you are ready to execute the process. Depending on the type of battery you have chosen, you will have the available choices listed on the following page:

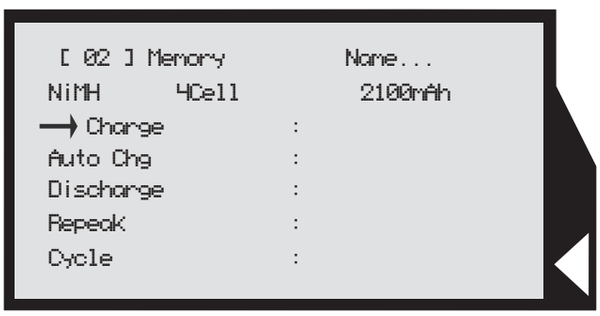
Warning **BEFORE SELECTING AN OPERATION, IT IS CRITICAL THAT YOU KNOW THE TYPE OF BATTERY YOU ARE WORKING WITH AND WHAT THE MANUFACTURER RECOMMENDATIONS ARE FOR CHARGING OR DISCHARGING. FAILURE TO FOLLOW THE MANUFACTURER'S RECOMMENDATIONS CAN RESULT IN DAMAGE TO THE BATTERY AND POSSIBLE EXPLOSION OR FIRE.**

BATTERY TYPE	OPERATION	OPERATION DESCRIPTION
LiPo, LiFe, LiIon, LiHV	Charge	The charge mode is for charging LiPo/LiFe/Li-Ion/ LiHV batteries in normal mode.
	Discharge	This mode is for discharging LiPo/LiFe/LiIon/LiHV batteries.
	Storage	This program is for charging or discharging a lithium battery which will not be used again for an extended period of time.
	Fast Charge	A fast charge will result in a smaller than usual charging capacity but will reduce the total charge time.
	Balance	This mode is for balancing the voltage of LiPo battery cells while charging.
NiMH, NiCd	Charge	The charger will charge NiMH and NiCd batteries using the charge current set by the user.
	Auto Charge	In this program, the charger detects the condition of the connected battery and automatically charges the battery. NOTE: You should set the upper limit of the charge current to avoid damage by excessive charging current. The Power Peak E7 may not be able to detect the charge capacity of low resistance batteries.
	Discharge	This mode is for discharging a NiMH/NiCd battery.
	Re-Peak	In re-peak charge mode, the charger can peak charge the battery once, twice, or three times in a row automatically. This is good for confirming the battery is fully charged and for checking how well the battery receives fast charges.
	Cycle	Automatically charges/discharges the battery up to 5 times. This process can enhance the performance of NiMH/NiCd batteries.
Pb (Lead Acid)	Charge	This mode is for charging a Pb battery using the charge current set by the user.
	Charge	This mode is for discharging a Pb battery using the charge current set by the user.

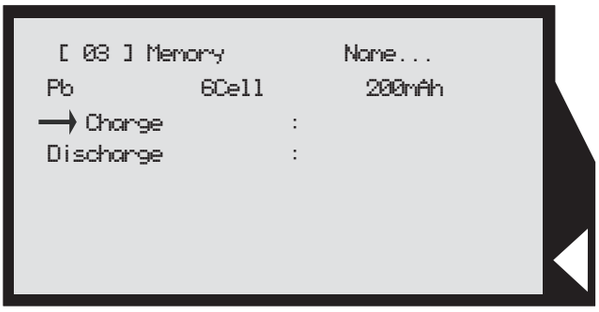
Press and hold the START/ENT button until the charge selection screen is displayed like one of the examples shown below and on following page.



Lithium Battery Process Screen

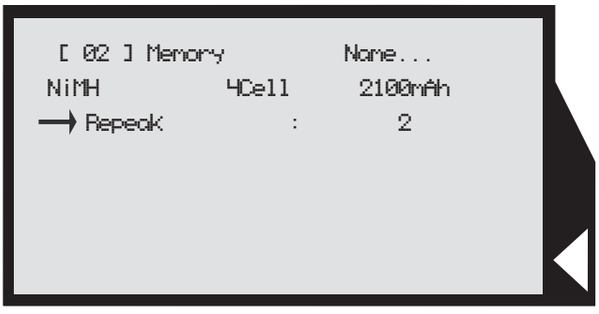


NiMH/NiCd

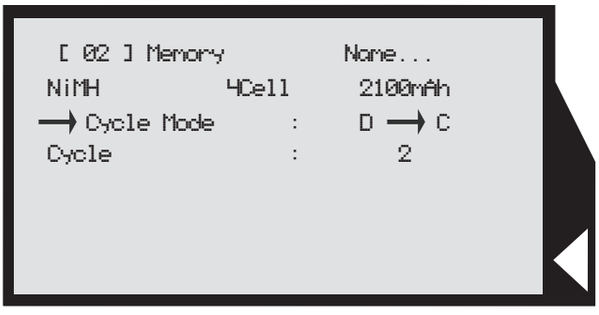


Pb Process Screen

Press and hold the START/ENT button until the charge selection screen is displayed like one of the examples shown on the left.



If you are working with a NiMH or NiCd battery and choose the Re-Peak charge mode, you will be prompted to enter the number of re-peak cycles you want to perform.
You can choose from 1 - 3.



If you are working with a NiMH or NiCd battery and choose the Cycle charge mode, you will be prompted to choose if the first process is to charge or discharge and how many cycles you want the charger to perform.
You can choose from 1 – 5 cycles.

Now that you have set all the parameters for your battery and chosen which process you want to run, you are ready to execute the operation. Now would be a good time to check to make sure the charge settings are correct and within the battery manufacturer's recommendations.

Warning **BEFORE YOU BEGIN CHARGING YOUR BATTERY, MAKE SURE YOU HAVE READ AND UNDERSTAND ALL OF THE WARNINGS AND SAFETY INFORMATION CONTAINED ON PAGE 3.**

Warning **DURING CHARGING/DISCHARGING, THE BATTERY SHOULD BE PLACED INSIDE A FIRE PROOF/RETARDANT BAG AND ON A FIRE PROOF SURFACE, AWAY FROM OTHER COMBUSTIBLE OBJECTS.**

STARTING THE PROCESS

Press and hold the START/ENT button until you hear a confirmation beep and see BATTERY CHECK WAITING, if everything is setup correctly, the process will begin.

Note

LITHIUM BATTERIES MUST ALWAYS BE CHARGED WITH THE BALANCE LEAD CONNECTED.

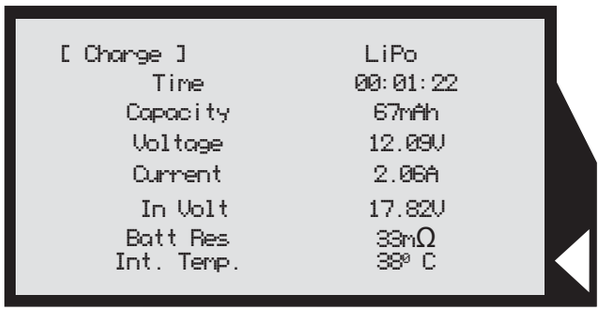
PROGRAM STOP: During the charging process, press **STOP/ESC** to stop the process.

PROGRAM COMPLETE: When the charging process is finished, an audible sound will be heard.

INFORMATION DISPLAYED DURING THE PROCESS:

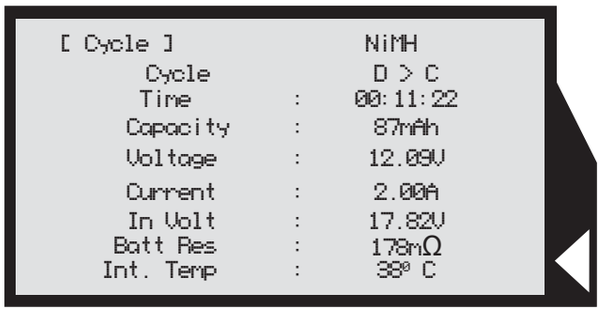
Once the process has begun, you can use the + and - buttons to scroll through the various information displayed during the process. The types of information displayed are Time, Input Capacity, Input Voltage, Feed Current, Input Voltage* Battery Resistance, and Internal Temperature. Additionally while charging a NiCd or NiMH battery, you can see the Cycles and Re-Peak processes.

*When the charger is attached to an AC power source, the voltage displayed is that of the internal MPU.



This shows what information is available while charging a Lithium type battery. The information is displayed across two screens.

Pressing the START/ENT button takes you to a display of the voltage curve line, pressing it a second time takes to the cell balance screen.

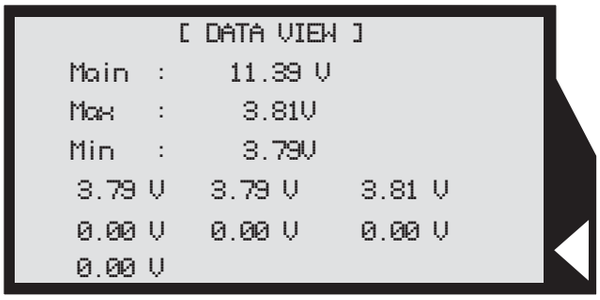


This shows what information is available while charging a NiMH battery. The information is displayed across two screens.

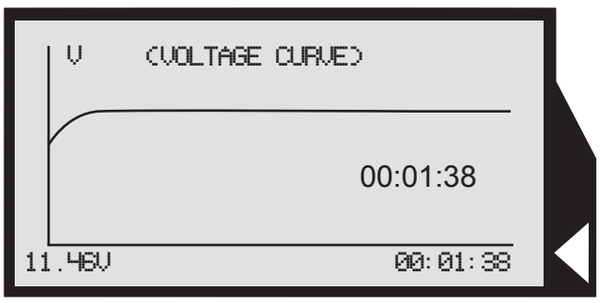
Pressing the START/ENT button takes you to a display of the voltage curve line.

Note

IT IS POSSIBLE TO ALTER THE CHARGE CURRENT DURING A CHARGE/DISCHARGE PROCESS: NAVIGATE TO THE "CURRENT" FUNCTION BY PRESSING THE "START/ ENT." BUTTON, THEN CHANGE THE CURRENT USING THE "+" OR "-" BUTTONS. THE NEW VALUE APPLIES ONLY TO CURRENT PROCESS, AND IS NOT SAVED.



The Data View menu displays information pertaining to the charging and discharging processes of a Lithium chemistry battery. When a balancing cable is attached, the screen will also display the voltage of the individual cells as well as the highest and lowest cell value.

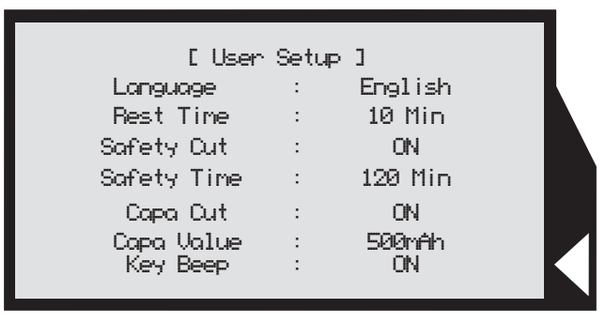


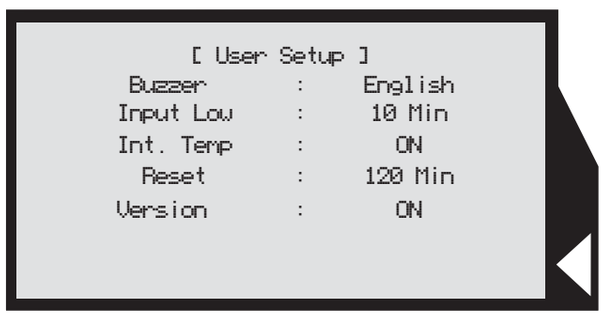
The voltage curve screen shows the voltage curve during the charge or discharge process. Also shown is the actual voltage as well as elapsed time.

USER SETUP MENU

When powered on for the first time, the Power Peak E7 charger will load with default values in the programmable user settings. The screen displays the following information in sequence and the user can change the value of the parameters on each screen. Use the + and - buttons to scroll through the option, when you are ready to change the parameter values in the program, press START/ENT to highlight the value, and then select the appropriate values with + and - buttons. Store the value by pressing START/ENT once.

The screen shots and table below show the user settings that can be changed as well as the available options.



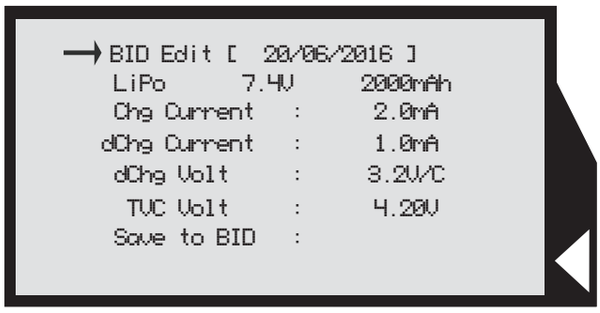


Item	Selection	Description
Language	English, German, Italian and French	Menu language
Pause	1 - 60 Minutes	Pause setting between charge / discharge cycles 1 -60 minutes. This setting is typically only used with NiMH or NiCd batteries.
Time Cut-off	ON/OFF	Activates the time limit safety function. The default is ON, it is not recommended to change this.
Time Limit	1 - 720 Minutes	When you start a charge process, the integral safety timer of the battery automatically starts running at the same time. This is programmed to prevent overcharging the battery if it proves to be faulty, or if the termination circuit cannot detect the battery is full. The value for the safety timer should be generous enough to allow a full charge of the battery.
Capacity Cut-off	ON / OFF	Activates the capacity limit cut-off safety function. Default is on.
Capacity Cut-off	100-60,000mAh	This program sets the maximum charge capacity that will be supplied to the battery during a charge. If the delta peak voltage is not detected nor has the safety timer expired for any reason, this feature will automatically stop the process at the selected capacity value. Default is 5000mAh.
Key Beep	ON/OFF	Pause setting between charge / discharge cycles 1 - 60 minutes. This setting is typically only used with NiMH or NiCd batteries.
Buzzer	ON/OFF	Turns end of process melody on or off. Default is on.
Input Low	10.3 - 11.0V	Users can change the DC Input low voltage warning as necessary. The default value is 11.0V.
Int. Temp		Displays the internal temperature of the charger.
Reset		Selecting this resets the charger to factory defaults and erases all the previously set parameters. After selecting this, you have to press and hold the START / ENT button for at least two seconds.
Version		Displays the charger’s firmware version.

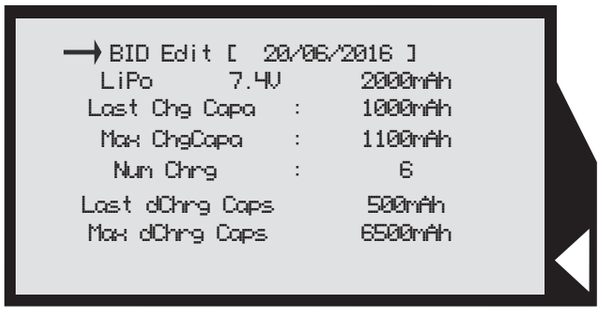
USING THE BATTERY IDENTIFICATION SYSTEM (BID)
(Chips and Keys sold separately)

When a programmed BID chip or key is connected to the Power Peak E7, it defines the parameters for the charger. All you need to do is press the Start button, and the charge or discharge process commences. Since all the essential information is stored on the BID chip, the battery always carries its own data with it, and the data can easily be displayed on the charger.

As soon as a BID chip or key is connected to the charger, the charger switches to BID mode for displaying or programming the BID chip or key. If the beeper is active, you will hear a brief beep at this point. The same applies if the charger is switched on with a BID chip or key already connected.



The BID chip or Key is programmed just like a memory slot. Refer to page 14 to set the charge or discharge parameters. Once set, use the + and – buttons to scroll to Save to BID and press START/ENT to write the settings to the BID Chip or Key already connected.



The BID Information screen displays a variety of data such as last charge capacity, maximum charge capacity, the number of discharge cycles, last discharge capacity and maximum charge capacity.

Note

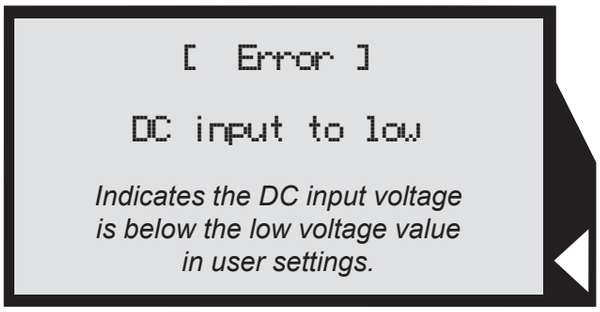
THE DATA CANNOT BE DISPLAYED WHILE ANY PROCESS IS CURRENTLY ACTIVE.

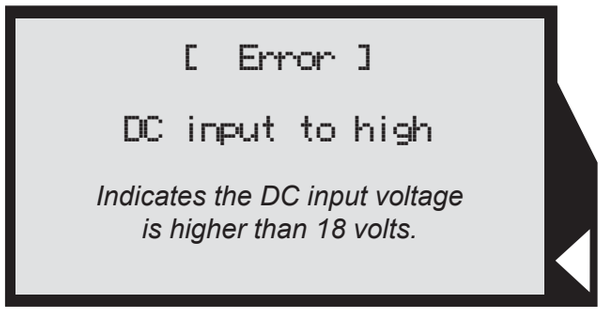
An analysis of the above data display shows the following.

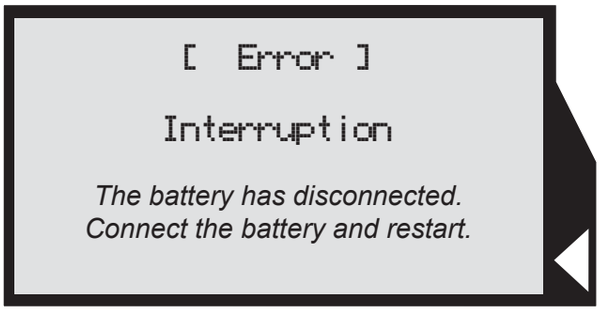
- The last charged-in capacity was 1000mAh.
- The highest charged-in capacity was 1100mAh.
- To date, the battery has been charged six times.
- The most recent discharge capacity was 500mAh.
- The highest discharged capacity was 650mAh.

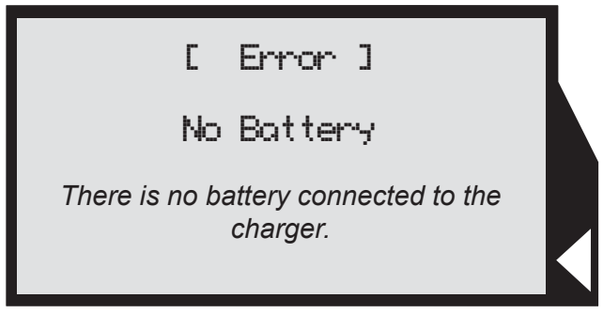
WARNING AND ERROR MESSAGES

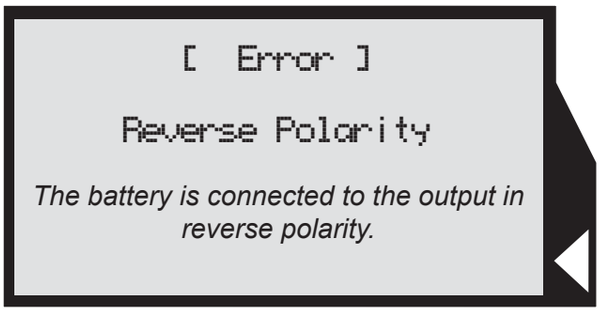
The Power Peak E7 is equipped with special safety features to ensure safe and reliable charging and discharging operations. As soon as a fault occurs, a corresponding error message will appear on the screen, and the buzzer emits a warning sound. After eliminating the cause, you can clear this message by pressing the STOP/ESC button.

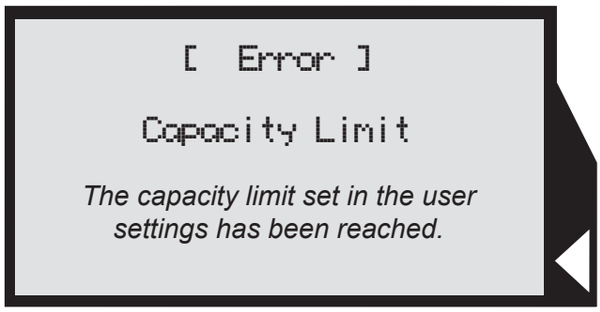


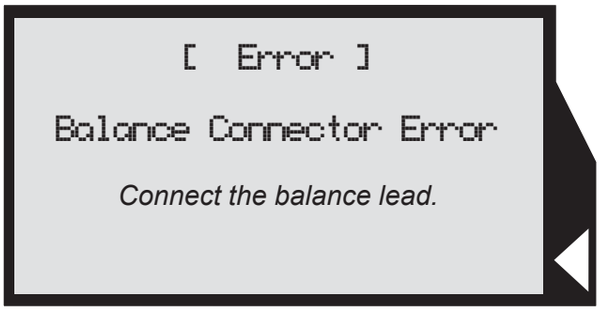


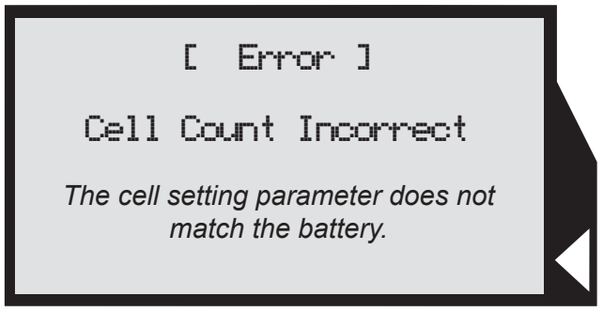




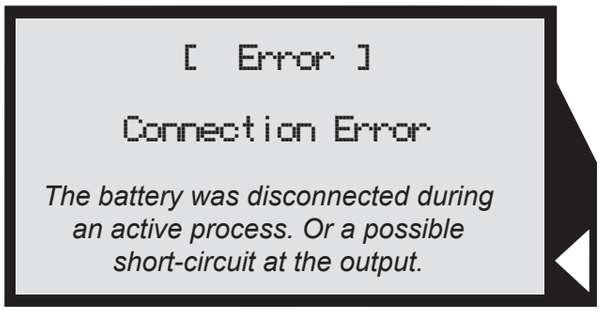


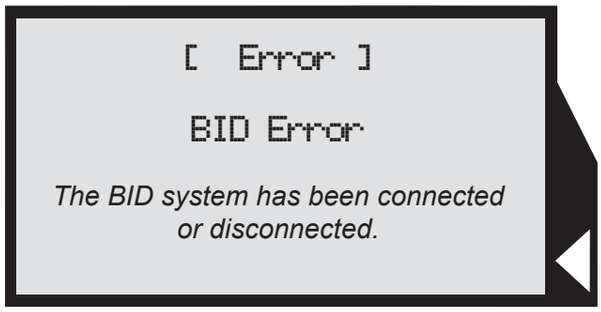


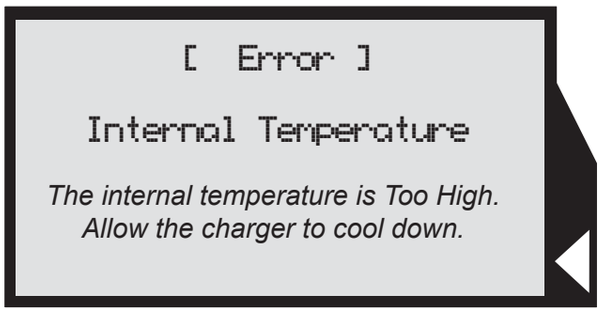


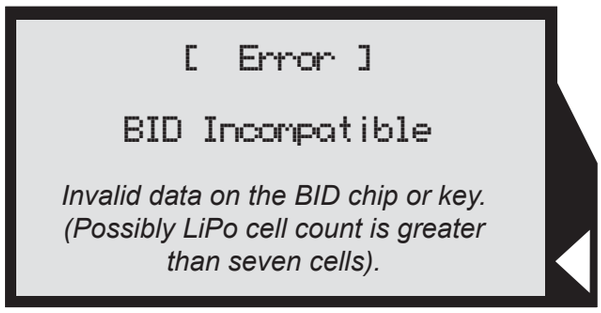


WARNING AND ERROR MESSAGES CONTINUED...









USB PORTS

The Power Peak E7 has a mini USB socket in the front. A USB cord can be connected to the socket and connected to your PC. Additionally there is a 5VDC 2.1A USB output port that can be used for charging accessories.

CONFORMITY DECLARATIONS

Hitec's Power Peak E7 satisfies all relevant and mandatory CE directives and complies with FCC Part 15 Subpart B: 2010.

DISPOSAL AND PROP 65 WARNING

This symbol indicates that when this type of electronic device reaches the end of its service life, it cannot be disposed of with normal household waste and must be recycled. To find a recycling center near you, refer to the internet or your local phone directory for electronic waste recycling centers.

STATE OF CALIFORNIA PROPOSITION 65 WARNING:

This product contains chemicals known to the State of California to cause cancer. Use caution when handling this product and avoid exposure to any electronic components or internal assemblies.

LIABILITY EXCLUSION

This charger is designed and approved exclusively for use with the types of batteries stated in this Instruction Manual. Hitec RCD, USA accepts no liability of any kind if the charger is used for any purpose other than that stated. We are unable to ensure that you follow the instructions supplied with the charger, and we have no control over the methods you employ for using, operating and maintaining the device. For this reason, we are obliged to deny all liability for loss, damage or costs which are incurred due to any misuse or operation of our products. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of Hitec RCD, USA products which were immediately and directly involved in the event in which the damage occurred.

ONE YEAR LIMITED WARRANTY

For a period of one year from the date of purchase HITEC RCD USA, INC. SHALL REPAIR OR REPLACE, at our option, defective equipment covered by this warranty, otherwise the purchaser and/or consumer is responsible for any charges for the repair or replacement of the charger. This warranty does not cover cosmetic damages and damages due to acts of God, accident, misuse, abuse, negligence, improper installation, or damages caused by alterations by unauthorized persons or entities. This warranty only applies to the original purchaser of this product and for products purchased and used in the United States of America, Canada and Mexico. Plastic cases are not covered by this warranty.

THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND WHETHER EXPRESS OR IMPLIED. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY. HITEC RCD, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY RELATING TO THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS

SERVICE AND REPAIR INFORMATION

To have your Hitec charger serviced:

1.Visit the Hitec website at www.hitecrcd.com and download the service request form (under the Support section). 2.Fill out the service request form completely and include a copy of your original receipt showing the purchase date.

- Package your product in its original packaging or use a suspension-type packaging (foam peanuts or crumpled newspaper). Hitec RCD shall not be responsible for goods damaged in transit.

- Ship prepaid (COD or postage-due returns will not be accepted) via a traceable common courier (UPS, insured parcel post, FedEx, etc.) to:

Hitec RCD USA, Inc., Customer Service Center, 12115 Paine St., Poway CA 92064

HITEC

POWER PEAK® E7 200 W

EQ-BID 12V/ 230V • PROFESSIONAL BALANCE CHARGER • DISCHARGER

Hitec RCD USA, Inc | 12115 Paine St., Poway CA 92064 | (858) 748-6948 | www.hitecrcd.com