

HiTEC X4

Four-channel multi charger



Instruction Manual

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Congratulations on your choice of the Hitec X4 multi charger. You are now the owner of a compact charger with battery management and integral balancer.

The unit is simple to use, but the operation of a sophisticated automatic charger such as the Hitec X4 does require some knowledge on the part of the user. These operating instructions are designed to ensure that you quickly become familiar with its functions.

Therefore, it is important that you read this instruction manual in its entirety before attempting to use your new automatic charger. We hope you have many years of pleasure and success with your new battery charger.

Hitec X4 employs the circuit that features four totally independent but identical power outputs, each powered by 50 watts. The total power output is 200 watts. As a result, it can charge or discharge up to 4 x 15 cells of NiCd/NiMH or 4 x 6 series of lithium batteries simultaneously. The Hitec X4 has four individual cell voltage balancers at each output; therefore, a separate balancer is not required when charging lithium batteries (LiPo/LiIon/LiFe) for voltage balancing.

The twin fan cooling system has an internal temperature sensor which controls fan speed, making it smart and efficient.

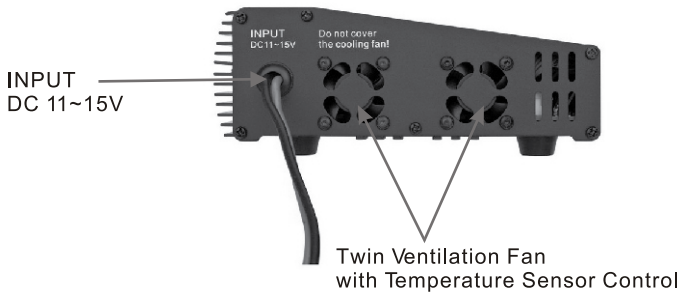
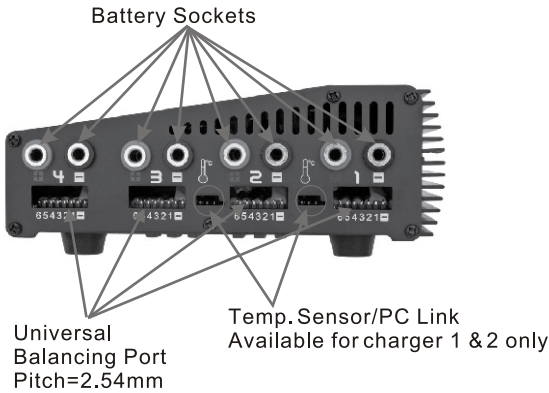
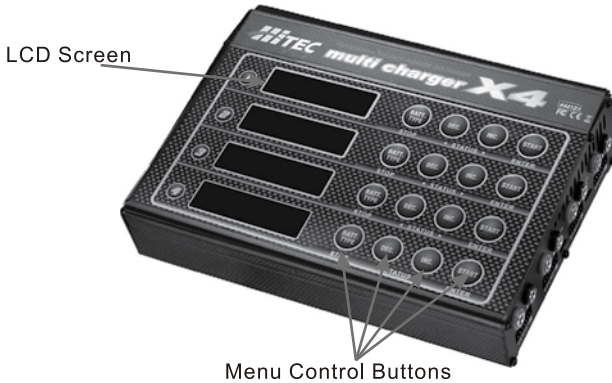
Handling batteries and battery chargers can be dangerous, so please take caution and read all instructions and warnings thoroughly.

Liability Exclusion

This charger was 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. Since we are unable to ensure the proper following of the supplied instructions and have no control over one's use of employment in using, maintaining and operating the device, we are obliged to deny all liability for loss, damage or costs which are incurred due to incompetent or incorrect use and 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 those Hitec RCD products which were immediately and directly involved in the event of damage.

INTRODUCTION

Please read this entire operating manual completely and attentively before using this product, as it covers a wide range of information on operation and safety.



The Hitec X4 allows you to plug 4 batteries into one charger simultaneously, and it will intelligently and automatically charge all 4 of them at once to their maximum capacity. The batteries being charged do not need to have the same configuration. You can connect different chemistry NiMH/NiCD/LiPo/LiFe batteries into any of the charging ports. This eliminates the time consuming efforts of charging all your batteries separately.



Optimized operating software

The Hitec X4 features an AUTO function that sets the current feeding during the charging and discharging processes. It can prevent overcharging which can lead to an explosion due to the user's fault, especially with lithium batteries. It can disconnect the circuit automatically and will alarm once if a malfunction is detected. To achieve maximum safety and minimize trouble, all the programs for this product are controlled through two-way linkage and communication. All the settings can be configured by the user.

Internal independent lithium battery balancer

The Hitec X4 employs an individual cell, voltage balancer. It isn't necessary to connect an external balancer for balance charging.

Balancing individual cells while discharging the battery

During the process of discharging, the Hitec X4 can monitor and balance each cell of the battery individually. If any single cell is abnormal, an error message will be indicated and the process will be ended automatically.

Adaptable to various types of lithium batteries

The Hitec X4 is adaptable to various types of lithium batteries, such as Li-ion, LiPo and the new LiFe series of batteries.

SPECIAL FEATURES

Fast and storage mode of lithium batteries

There are two modes for charging lithium batteries. The 'fast' mode reduces the duration of charging. The 'store' mode controls the final voltage of your battery to ensure protection from drainage of power.

Maximum safety

The charger utilizes delta-peak sensitivity. Termination of the automatic charge is based on the delta-peak voltage detection principle. When the battery's voltage exceeds the threshold, the process will be terminated automatically.

Automatic charging current limit

You can set up the upper limit of the charging current when charging your NiCd or NiMH battery. It is useful for the NiMH battery of low impedance and capacity to be set in the 'AUTO' charging mode.

Capacity limit

The charging capacity is calculated by multiplying the charging current by time. If the charging capacity exceeds the limit, the process will be terminated automatically when you set the maximum value.

Temperature threshold*

The battery's internal chemical reaction will cause the temperature of the battery to rise. If the temperature limit is reached, the process will be terminated.

* This function is available by connecting an optional temperature probe which is not included in the package.

Processing time limit:

You can also limit the maximum process time to avoid any possible defect.

Data store/load

For the user's convenience, data can be stored for a maximum of five batteries. You can keep the data pertaining to the program setting of the battery during charging or discharging. Users can view this data at any time without any special program setting.

Cyclic charging/discharging

1 to 5 cyclic and continuous processes of charge>discharge or discharge>charge are operable for battery refreshing and balancing in order to stimulate the battery's activity.

PC based analysis using USB communication*

The Hitec X4 offers a PC-based program which can analyze the characteristics of the battery via a USB port. It shows a graph of voltage, current and capacity curves. It also displays the individual voltage of each cell in the lithium battery pack.

* A PC-LINK USB adaptor can be purchased separately.

WARNING AND SAFETY NOTES

These warning and safety notes are extremely important. Please follow the instructions for maximum safety; otherwise the charger and battery can be damaged or even worse, cause a fire.

- ❗ Never leave the charger unattended when it is connected to its power supply. If any malfunction is found, **TERMINATE THE PROCESS AT ONCE** and refer to the operation manual.

- ❗ Keep the charger well away from dust, damp, rain, heat, direct sunshine and vibration. Never drop it.

- ❗ The allowable input voltage is 11~15V DC.

- ❗ This charger and the battery should be put on a heat-resistant, non-flammable and non-conductive surface. Never place them 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 may be damaged. Fire or explosion can occur due to overcharging. This warranty is not valid for any damage or subsequent damage arising as a result of misuse or failure to observe the procedures outlined in this manual.

- ❗ To avoid short circuiting between the charge lead, always connect the charge cable to the charger first, then connect the battery. Reverse the sequence when disconnecting.

WARNING AND SAFETY NOTES

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

- A battery pack which consists of different types of cells (including different manufacturers)
- A battery that is already fully charged or just slightly discharged
- Non-rechargeable batteries (pose an explosion hazard)
- Batteries that require a different charge technique from NiCd, NiMH, LiPo or gel cell (Pb, lead-acid battery)
- A faulty or damaged battery
- A battery fitted with an integral charge circuit or a protection circuit
- 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 commencing charging:

- Did you select the appropriate program suitable for the type of battery you are charging?
- Did you set up 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.

❶ **Charger Specifications/Operating Instructions:**

NiCd/NiMH

Voltage level: 1.2V/cell

Allowable fast charge current: 1C-2C (depends on the Performance of cell)

Discharge voltage cut off level: 0.85V/cell (NiCd),
1.0V/cell(NiMH)

Li-ion

Voltage level: 3.6V/cell

Max. charge voltage: 4.1V/cell

Allowable fast charge current: 1C or less

Min. discharge voltage cut off level: 2.5V/cell or higher

LiPo

Voltage level: 3.7V/cell

Max. charge voltage: 4.2V/cell

Allowable fast charge current: 1C or less

Discharge voltage cutoff level: 3.0V/cell or higher

LiFe

Voltage level: 3.3V/cell

Max. charge voltage: 3.6V/cell

Allowable fast charge current: 4C or less

Discharge voltage cutoff level: 2.0V/cell or higher

Pb (Lead-acid)

Voltage level: 2.0V/cell

Max. charge voltage: 2.46V/cell

Allowable fast charge current: 0.4C or less

Discharge voltage cutoff level: 1.75V/cell or higher

WARNING AND SAFETY NOTES

❗ Charging

During the charge process, a specific quantity of electrical energy is fed into the battery. The charge quantity is calculated by multiplying charge current by charge time. The maximum permissible charge current varies depending on the battery type or its performance, and can be found in the information provided by the battery manufacturer. Only batteries that are expressly stated to be capable of quick charge are allowed to be charged at rates higher than the standard charge current.

Connect the battery to the terminal of the charger. Red is positive and black is negative. Due to the difference between resistance of cable and connector, the charger cannot detect resistance of the battery pack. The essential requirement for the charger to work properly is that the charge lead should be of adequate conductor cross-section, and high quality connectors, which are normally gold-plated, should be fitted to both ends.

Always refer to the manual by the battery manufacturer pertaining to charging methods. Operate according to their recommended charging current and charging time. Lithium batteries, in particular, should be charged strictly according to the manufacturer's instruction.

Close attention should be paid to the connection of lithium batteries.

Do not attempt to disassemble the battery pack arbitrarily.

Please take note that lithium battery packs can be wired in parallel and in series. In the parallel connection, the battery's capacity is calculated by multiplying the single battery's capacity by the number of cells, bearing in mind that total voltage stays the same. If the voltage is imbalanced, it may cause a fire or explosion. Lithium batteries are recommended to charge in series.

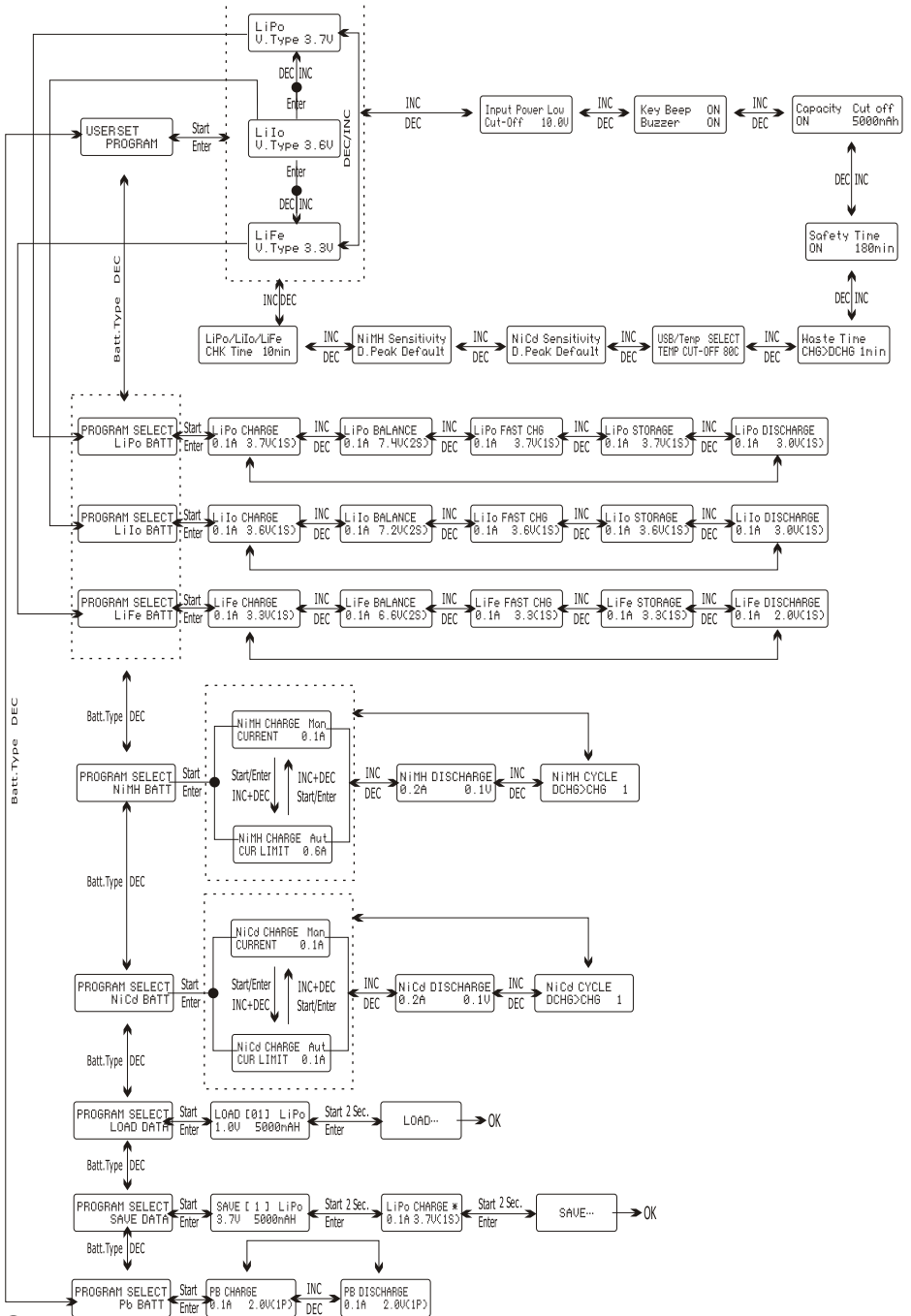
❗ Discharging

The main purpose of discharging is to clean the residual capacity of the battery or to reduce the battery's voltage to a defined level. The same attention should be paid to the discharging process as to the charging process. The final discharge voltage should be set up correctly to avoid deep discharging. Lithium batteries cannot be discharged to lower than the minimum voltage, or it will cause a rapid loss of capacity or a total failure. Generally, lithium batteries don't need to be discharged. Please pay attention to the minimum voltage of lithium batteries to protect them.

Some rechargeable batteries have a memory effect. If they are partly used and recharged before the whole charge is accomplished, they remember this and will only use that part of their capacity next time. This is called 'memory effect.' It is said that NiCd and NiMH batteries suffer from 'memory effect.' NiCd has more 'memory effect' than NiMH.

Lithium batteries are recommended to be discharged partially rather than fully. Frequent full discharging should be avoided if possible. Instead, charge the battery more often or use a battery of larger capacity. Full capacity cannot be reached until it has been subjected to 10 or more charge cycles. The cyclic process of charge and discharge will optimize the capacity of the battery pack.

PROGRAM FLOW CHART



LITHIUM POLYMER BALANCE CHARGE PROGRAM CONNECTION DIAGRAM

CONNECTING THE CHARGER

The Hitec X4 comes with 4mm male bullet connectors attached to the power INPUT cables. These cables are appropriate for attaching directly to most high quality AC-DC power supply units, such as eFUEL model PSU30A (13.8V, 30A, 400W). Also included are large terminal clips with matching 4mm female bullet connectors for attaching directly to 12V car batteries. It is critically important that you use either a fully charged 13.8 car battery or a high quality AC-DC power supply in the range of 12V to 15V DC output, with minimum current rating of 20A to ensure reliable performance.



4mm bullet connectors plugging to eFUEL power supply directly



Using terminal clip attaching to car battery

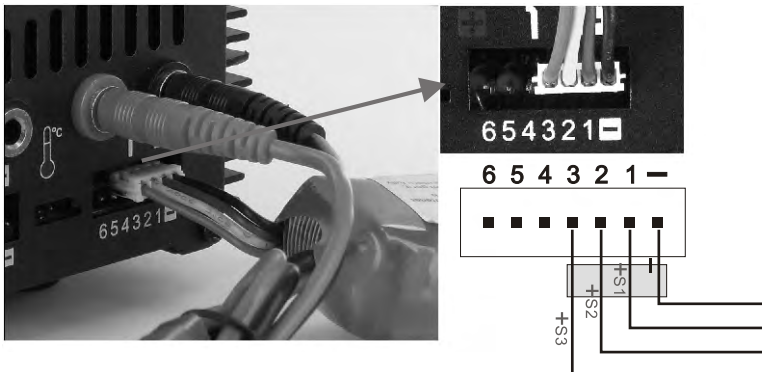
CONNECTING THE BATTERY

Important!!! Before connecting a battery, it is absolutely essential to check one last time that you have set the parameters correctly. If the settings are incorrect, the battery may be damaged and could even burst into flames or explode. To avoid short circuits between the banana plugs, always connect the charge leads to the charger first, and then to the battery. Reverse the sequence when disconnecting the pack.

Balance socket:

The balance wire attached to the battery must be connected to the charger with the black wire aligned with the negative marking. Take care to maintain correct polarity. See the wiring diagram below.

This diagram shows the correct way to connect your battery to the Hitec X4 while charging in the balance charge program mode only.

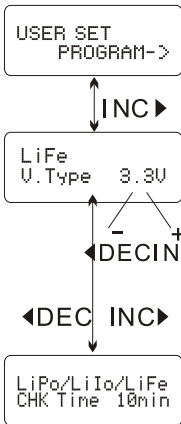


WARNING:
⚠ Failure to connect as shown in this diagram will damage this charger.

INITIAL PARAMETER SETUP (USER'S SETUP)

By default, this charger will be set to typical user settings when it is connected to DC 11~18V for the first time. The screen displays the following information in sequence and the user can change the parameter on each screen.

If you need to alter the parameter value in the program, press Start/Enter key to make it blink, then change the value with the INC or DEC key. The value will be stored by pressing the Start/Enter key once.

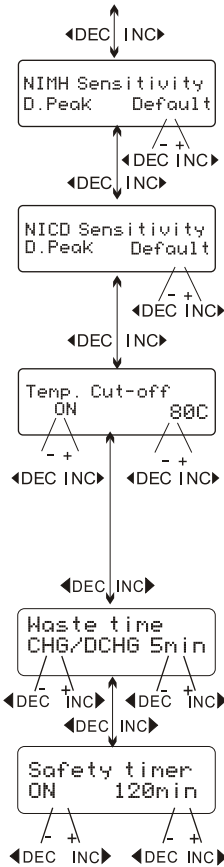


User setup starting screen.

The screen displays the nominal voltage of a lithium battery. There are three kinds of lithium batteries: LiFe(3.3V), Lilo(3.6V) or LiPo(3.7V). Important: You must check the battery carefully and set it up correctly. If it is different from the correct value, the battery may explode during the charge process.

The Hlt ec X4 automatically recognizes the cell count of a lithium battery at the beginning of the charge or discharge process to avoid an incorrect setting by the user. However, deeply discharged batteries can be perceived incorrectly. To prevent this error, you can set the time term to verify the cell count by the processor. Normally, 10 minutes is enough to perceive the cell count correctly. For a battery of larger capacity, you may extend the time term. However, if you set the time term too long for a battery of smaller capacity, the charge or discharge process can be finished within the time term with the wrong cell count. This may cause a fatal result. If the processor recognizes the cell count incorrectly at the beginning of the charge or discharge process, you may extend the time. Otherwise, you better utilize the default value.

INITIAL PARAMETER SETUP (USER'S SETUP)



This shows the trigger voltage for automatic charge termination of NiMH and NiCd batteries. The effective value ranges from 5 to 20mV per cell. If the trigger voltage is set higher, there is a danger of overcharging the battery. If it is set lower, there is a possibility of premature termination. Please refer to the technical specifications of each battery.

NiCd default: 12mV
NiMH default: 7mV

When using the optional temperature probe feature which contacts with the surface of the battery, the temperature cutoff can be on or off. If it is on, set the maximum temperature that the charger should allow the battery to reach during the charge process. Once a battery reaches this temperature during charge, the process will be terminated to protect the battery.

The battery becomes warm after cycles of the charge/discharge process. The program will insert a time delay after each charge/discharge process to allow the battery enough time to cool down before beginning the next cycle of the charge/discharge process. The valid value ranges from 0 to 60 minutes.

When the charge process starts, the integrated safety timer starts to run simultaneously. If an error is detected or the termination circuit cannot detect whether the battery is fully charged or not, the unit is programmed to prevent overcharging. Please refer to the statement below to calculate the safe timer to be set.

Safe timer calculation

When charging NiCd or NiMH batteries, divide the capacity by current, then divide the result by 11.9, set this number of minutes as the value for the safe timer setting. If the charger stops at this time threshold, about 140% of the capacity will have been fed into the battery.

For example:

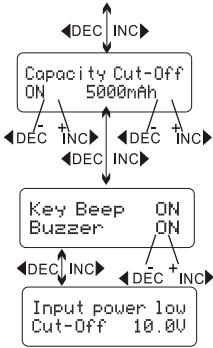
Capacity Current Safety Time

2000mAh 2.0A (2000/2.0=1000)/11.9=84 minutes

3300mAh 3.0A (3300/3.0=1100)/11.9=92 minutes

1000mAh 1.2A (1000/1.2=833)/11.9=70 minutes

INITIAL PARAMETER SETUP (USER'S SETUP)



The program provides the maximum capacity protection function. If the delta-peak voltage cannot be detected or the safe timer times out, the charge process will stop automatically when the battery reaches the set maximum charge capacity set by the user.

A beep to confirm the user's operation sounds every time a button is pressed. A beep or melody sounds at various times during operation to confirm different mode changes.

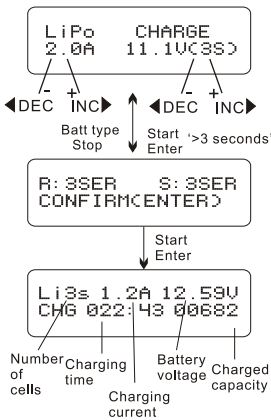
These functions can be switched on or off. This function monitors the voltage of the input battery used to power this charger. If the voltage is lower than the value set by the user, the program will end to protect the input battery.

Lithium LiPo/LiLo/LiFe program

This program is only suitable for charging/discharging lithium (LiPo/LiLo/LiFe) batteries with a nominal voltage of 3.3/3.6/3.7V per cell. Different batteries have different charge techniques. There are two methods termed as constant voltage and constant current. The charge current varies according to battery capacity and specification. The final voltage is very important as it should precisely match the voltage of the battery, LiPo is 4.2V LiLo is 4.1V LiFe is 3.6V. The current and voltage of the battery should be set correctly.

When you want to change the values of parameters, please press the Start/Enter key to make it blink and then use DEC or INC to change the value. Press the Start/Enter key again to store the value.

Charging of lithium battery



The left side of the first line on the charger shows the type of battery you choose. The value on the left side of the second line of the charger is the current, set by the user. After setting the current and voltage, press the Start/Enter key for more than 3 seconds to start the process. Charge current: 0.1-5.0A Voltage: 3.7-22.2V.

This displays the number of cells you set up and the processor detects. "R" shows the number of cells detected by the charger and "S" is the number of cells set by you on the previous screen. If both numbers are identical, you can start charging by pressing the Start/Enter button. If not, press the BATT TYPE/STOP button to go back to the previous screen. Carefully check the number of cells of the battery pack before proceeding.

This screen shows the real-time status during the charge process. Press the BATT TYPE/STOP key once to stop the charge process.

Charging lithium battery in the charge mode

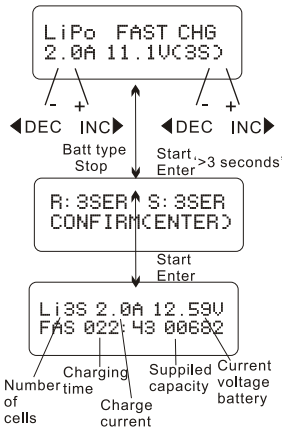
This charging mode is for charging LiPo/Li-Ion/LiFe batteries without balance lead.

Charging lithium battery in the balance mode

This function is for balancing the voltage of lithium battery cells while charging. In the balance mode, the battery needs to have a balance lead to connect to the individual balance port at the right side of the charger. You also need to connect the battery's power lead to the output of the charger. Charging in this mode is different from the normal mode. The built-in processor monitors the voltage of individual cells and controls the input current fed into each cell to equalize voltage.

FAST CHARGING OF LITHIUM BATTERY

Fast charging of lithium battery



The left side of the first line on the charger shows the type of battery you choose. The value on the left side of the second line of the charger is the current, set by the user. After setting the current and voltage, press the Start/Enter key for more than 3 seconds to start the process. Charge current: 0.1-5.0A Voltage: 3.7-22.2V.

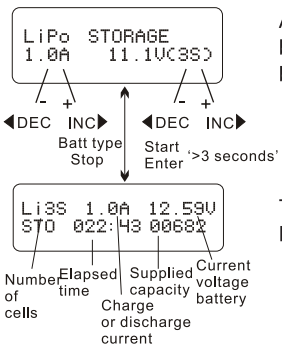
This displays the number of cells you set up and the processor detects. "R" shows the number of cells detected by the charger and "S" is the number of cells set by you on the previous screen. If both numbers are identical, you can start charging by pressing the Start/Enter button. If not, press the BATT TYPE/STOP button to go back to the previous screen. Carefully check the number of cells of the battery pack before proceeding.

This screen shows the real-time status during the charge process. Press the BATT TYPE/STOP key once to stop the charge process.

Charging lithium battery in the fast charge mode

When the end of the charging process is near, the charging current will become lower. Charging capacity will be a little smaller than normal charging, but charging time will be shortened accordingly.

Storage control of lithium battery



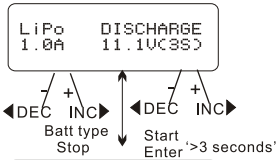
At this screen, you can set up the current and voltage of the battery pack. Charging and discharging will make the batteries come to the voltage level known as the 'storage' state.

This screen shows the real-time status charging. Press the BATT TYPE/STOP key once to stop the charging process.

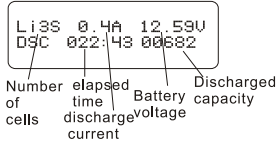
Charging lithium battery in the storage mode

This function is for charging/discharging batteries which are not used at once. This program is designed for charging or discharging batteries in a specific original state. They are classified by types: 3.75V Lilo, 3.85V LiPo and 3.3V LiFe. The program will begin to discharge if the original state of the battery exceeds the voltage level of storage.

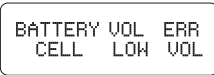
Discharging of lithium battery



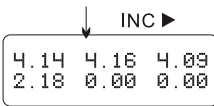
The value of the discharge current on the left cannot exceed 1C and the value on the right cannot be under the voltage recommended by the manufacturer to avoid deep discharging. Press the Start/Enter key for more than 3 seconds to start discharging.



This shows the real-time status of discharging, you can press the BATT TYPE/STOP key to stop discharging.



The processor detects when voltage of one cell is too low.

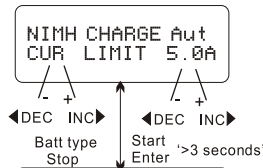


The value of voltage may be zero if disconnection occurs.

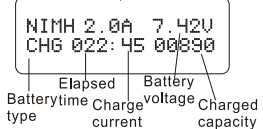
Voltage balancing and monitoring in the discharge process

The processor monitors voltage of each cell when the battery packs are in the 'storage' and discharging process. If voltage of any cell is abnormal, the Hitec X4 will show an error message and terminate the program. If there is battery damage or disconnection, you can see the error message and press INC to know which cell is damaged.

Charging of NiCd/NiMH battery



This program is for the charging of NiCd/NiMH batteries associated with RC model applications. You can press the Start/Enter key to make it blink and then INC or DEC to change the parameter value. Press the Start/Enter key to store the value.



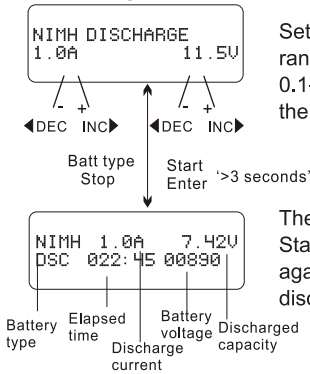
The screen shows the real-time status. Press the BATT TYPE/STOP key to end the program. A sound will emit to indicate the end of the program.

Charging NiCd/NiMH battery in the charge mode

This program charges the battery using the current you set. In the 'auto' state, you should set up the upper limit of the charge current to avoid damage by excessive feeding current. Some batteries of low resistance and capacity can lead to higher current in the 'auto' charging mode. In the 'manual' mode, it will charge with the current you set. You can make it blink in the current field and press INC and DEC simultaneously to swap between 'auto' and 'manual' mode. NOTE: Allowable fast charge current: 1C-2C

DISCHARGE OF NiCd/NiMH BATTERY

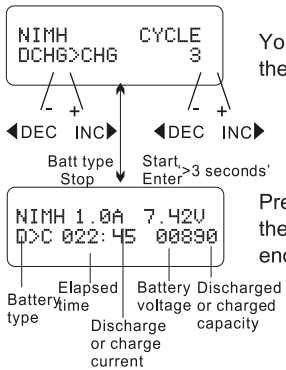
Discharge of NiCd/NiMH battery



Set the charge current on the left and the final voltage on the right. The range of the charge current is 0.1-1.0A; the range of the final voltage is 0.1-25.0V. Press the Start/Enter key for more than 3 seconds to start the program.

The screen indicates the discharging state. You can press the Start/Enter key to alter the discharge current. Press the Start/Enter key again to store the value. Press the BATT TYPE/STOP key to stop discharging. A sound will emit alerting the end of discharging.

Charge/discharge and discharge/charge cycle of NiCd/NiMH battery



You can set up the sequence on the left and the number of cycles on the right. The range of the cycle number is 1-5.

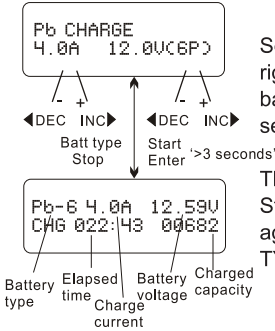
Press the BATT TYPE/STOP key to stop the program. You can press the Start/Enter key to alter the charge current. A sound indicates the end of the program.

DCHG	1	1314mAh
CHG	1	1430mAh

When it approaches the end, you can see the capacity of the battery being charged or discharged. You can press the INC or DEC key to display the result of each cycle.

CHARGING OF THE Pb BATTERY

Charging of the Pb battery



Set up the charge current on the left and the nominal voltage on the right. The range of current is 0.1-5.0A; the voltage should match the battery being charged. Press the Start/Enter key for more than 3 seconds to start charging.

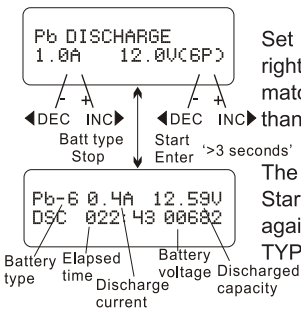
The screen displays the real-time discharging status. Press the Start/Enter key to alter the discharge current. Press the Start/Enter key again to store the parameter value you set. Press the BATT TYPE/STOP key to end the program.

Charging Pb (lead-acid) battery in the charge mode

This program is only suitable for charging Pb lead-acid batteries with nominal voltage from 2 to 20V. Pb lead-acid batteries are completely different from NiCd/NiMH batteries. These batteries can only deliver current lower in comparison to their capacity. The same restriction applies to the charging process. Consequently, the optimum charge current can only be 1/10 of the capacity. Pb batteries cannot be used for fast charging, please follow the instructions provided by the battery manufacturer.

Due to the chemistry characteristics of Pb batteries, the cutoff point may be difficult to detect at times. We recommend the user to use the CAPACITY CUTOFF feature to protect the battery. You can press the Start/Enter key to make it blink and alter the value of the parameters using the INC or DEC keys. Press the Start/Enter key to store the value.

Discharging of the Pb battery



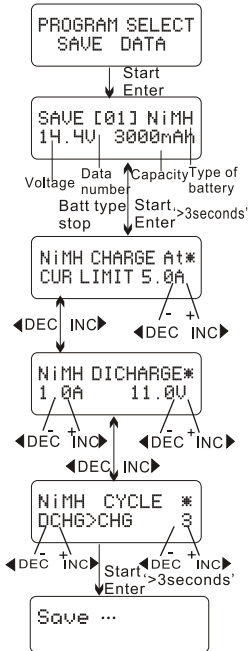
Set up the charge current on the left and the nominal voltage on the right. The range of discharge current is 0.1-1.0A; the voltage should match the battery being charged. Press the Start/Enter key for more than 3 seconds to start charging.

The screen displays the real-time discharging status. Press the Start/Enter key to alter the discharge current. Press the Start/Enter key again to store the parameter value you set. Press the BATT TYPE/STOP key to end the program.

STORAGE DATA PROGRAM

Storage data program

For your convenience, the Hitec X4 has a data storage and load program. It can store data for up to five batteries representing the respective specifications of each battery. You can call back the data when charging or discharging without setting up the program again. Press the Start/Enter key to make it blink, and use the INC or DEC keys to set up the parameters.



Setting of the parameters in the screen will not affect the charge and discharge process. It simply displays the specification of the battery. The example shown is for the NiMH battery pack which includes 12 cells with a capacity of 3000m Ah.

You can set up the charge current in the 'manual' mode or the current limit in the 'auto' mode. Press the INC and DEC keys simultaneously to make the current field blink and switch to the charge mode.

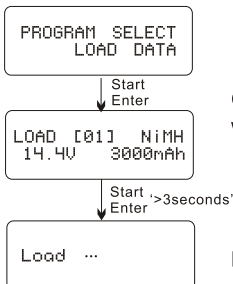
You can set up the discharge current and final voltage.

You can set up the charge/discharge sequence and cycle number.

Save the data.

Load data program

This program is designed to load the data stored at the "save data" program. Press the Start/Enter key to make the data field blink and press the INC or DEC keys for at least 3 seconds to load the data.



Choose the data number you want to call back. The data you want to call back will be displayed.

Load the data.

VARIOUS INFORMATION IN THE PROGRAM

Various information in the program

You can display various information on the LCD screen during the charging and discharging processes. Press the DEC key and the charger will display your settings. You can press the INC key to monitor the voltage of each cell while the battery is connected.

End Voltage
12.6V(3s)

When the program ends, the final voltage is displayed.

◀DEC↓

Capacity Cut-Off
On 500mAh

When the capacity cutoff function is turned on, the capacity value will be displayed.

◀DEC↓

Safety Timer
ON 200min

When the safety timer is displayed, the duration of time in minutes will be displayed.

◀DEC↓

Temp Cut-OFF
ON 80C 176F

This shows the temperature cutoff function is turned on.

◀DEC↓

Ext. Temp 26C

When the temperature probe is on, the external temperature will be displayed.

◀DEC↓

IN Power Voltage
12.56V

This shows the current input voltage.

◀DEC↓

4.14 4.16 4.09
0.00 0.00 0.00

The batteries are connected to each port through a cable. You can check the voltage of each cell in the battery pack. When the cable is connected to the ports on the charger, the program will display voltage for up to 6 batteries.

WARNING AND ERROR MESSAGE

Warning and error message

The Hitec X4 incorporates a variety of functions for the system to identify processes as well as the state of the electronics. In case of an error, the screen will display the cause of the error and emit an audible sound.

REVERSE POLARITY

Incorrect polarity connected.

CONNECTION BREAK

Battery connection is interrupted.

SHORT ERR

Short circuit of the output termination.

INPUT VOL ERR

Incorrect input voltage.

VOL SELECT ERR

The voltage of the battery pack has been selected incorrectly.

BREAK DOWN

The charger has malfunctioned for some reason. Seek professional advice.

BATTERY CHECK
LOW VOLTAGE

The voltage is lower than which is set. Please check the number of cells in the battery pack.

BATTERY CHECK
HIGH VOLTAGE

The voltage is higher than which is set. Please check the number of cells in the battery pack.

BATTERY VOLTAGE
CELL LOW VOL

The voltage of one cell in the battery pack is too low, please check the voltage of each cell.

BATTERY VOLTAGE
CELL HIGH VOL

The voltage of one cell in the battery pack is too high, please check the voltage of each cell.

BATTERY VOL ERR
CELL CONNECT

A wrong connection of the connector is detected, please check the connector and the cable.

CONTROL FAILURE

The processor cannot control the feeding current, please repair it.

SPECIFICATION

(stated values refer to one charger except dimension & weight)

Operating Voltage Range	DC 11 - 15 Volt
Power Source	12 V DC (car battery) / AC mains PSU (>200Watts) (recommend PSU eFUEL PSU-30A)
Charge Power	50 Watts, current is regulated accordingly e.g. 11.1V battery, charge current approx. 4.5 A e.g. 22.2 V battery, charge current approx. 2.2 A
Discharger Power	5 Watts, current is regulated accordingly
Cell Count	1-15 NiCd/NiMH cells 1-6 LiPo/LiIon/LiFe cells 1-10 Lead-Acid cells (2V - 20V)
Current Drain for Balancing Lithium	300mA
Charge Termination	
NiCd/NiMH	Automatic, negative delta-peak method
Lead-Acid and Lithium	Automatic, voltage-dependent, CC-CV process
Dimensions	225.4x158.6x62.4mm
Net Weight	1.09Kg.

The set contains:

1. Hitec X4 Charger
2. Plug in Battery Clamps
3. Alligator Clip Charging Cable
4. Tamiya Charging Connector
5. Receiver Battery Charging Connector
6. 18AWG Wire Charging Cable x 2
7. TP/FP Adapter
8. HP/PQ Adapter
9. EH Adapter

Content Subject to Change Without Notice



RECOMMENDED ACCESSORIES



30A DC
Power Supply



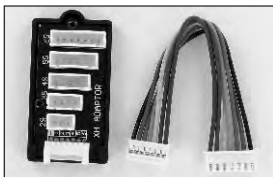
Software Kit



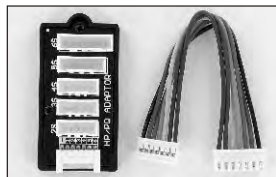
Temperature
Sensor Cable



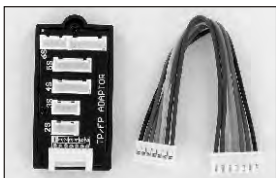
EH Adaptor



XH Adaptor



HP/PQ Adaptor



TP/FP Adaptor



Dean charging cable



Tamiya® charging cable



TRAXXAS® charging cable



Glow charging cable



Bullet charging cable



EC3 charging cable



Crocodile clip
charging cable



Futaba® RX
charging cable

CONFORMITY DECLARATION

The Hitec X4 satisfies all relevant and mandatory EC directives and FCC Part 15 Subpart B: 2008.

For EC directives:

The product has been tested to meet the following technical standards:

Test Standards	Title	Result
EN 55014-1:2006	Electromagnetic compatibility-Requirements for household appliances, electric tools and Similar apparatus - Part 1: Emission	Conform
EN55014-2:1997+A1:2001	Electromagnetic compatibility-Requirements for household appliances, electric tools and Similar apparatus - Part 2: Immunity-Product family standard	Conform
EN61000-6-1(2007)	Electromagnetic compatibility (EMC) -- Part 6-1:Generic standards - Immunity for residential, commercial and light-industrial environments	Conform
EN61000-6-3(2007)	Electromagnetic compatibility (EMC) -- Part 6-3:Generic standards -Emission standard for residential,commercial and light-industrial environments.	Conform



This symbol means that when electrical material reaches the end of its life, you must dispose of it separately from general household waste.

Take your charger to your local waste collection point or recycling center. This applies to all countries of the European Union and to other European countries with a separate waste collection system.

WARNING

This product contains chemicals known to the State of California to cause cancer <<http://en.wikipedia.org/wiki/Cancer>> and birth defects <http://en.wikipedia.org/wiki/Congenital_disorder> or other reproductive harm.

Warranty and service

We guarantee this product to be free of manufacturing and assembly defects for a period of one year from the date-of-purchase. The warranty only applies to material or operational defects which are present at the time of purchase. During that period, we will repair or replace, free of service charge, products deemed defective due to those causes.

You will be required to produce proof-of-purchase (i.e. invoice or receipt). This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification or as a result of failure to observe the procedures outlined in this manual.



All specifications and figures are subject to change without notice.

