YELLOWRC
powered by performance

B6AC
AC/DC FAST CHARGER

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AC/DC FAST CHARGER

PROGRAM SELECT
LiPo BATT

LiIon / LiPo / LiFe : 1~6cells   NiCd / NiMH : 1~15cells
Pb : 2~20V   Charge Rate : 0.1~5A   Discharge Rate : 0.1~1A

Batt. Type   Dec   Inc   Start

Instruction Manual

INTRODUCTION

Thank you for purchasing the B6SAC Balance Charger. This product is a rapid charger with a high performance microprocessor and specialized operating software. Please read this entire operating manual completely and attentively before using this product, as it covers a wide range of information on operating and safety. Or please do use this product in company with a specialist!

Specifications

Operating voltage range: DC11.0～18.0 Volt
                                         AC in: 100v～240V
                                         50/60Hz
Circuit power: Max. charge power 50W
                                         Max. discharge power 5W
Charger current range: 0.1A～5.0A
Discharger current range: 0.1A～1.0A
Current drain for balancing Li-po: 300mAh/cell
Li-ion/Polymer cell count: 1～6 series
Pb Battery voltage: 2V～20V
Weight: 531g(Net Weight)
Dimensions: 122*132*35mm

⚠ Warranty and Service

We guarantee this product for one year warranty from the time of purchase if defects are caused by our manufacturing or assembly. During the period, we will repair it or replace one without charge for the one deemed defective due to above causes.

You will be required to provide a proof of purchase (invoice or receipt). This warranty is not valid for any damage or subsequent damage arising from misuse, modification or failure to follow the procedures outlined in this manual.

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	Voltage of one cell in the battery pack is too low, please check the voltage of each cell.
BATTERY VOLTAGE CELL HIGH VOL	Voltage of one cell in the battery pack is too low, please check the voltage of each cell.
BATTERY VOLERR CELL CONNECT	Wrong connection of the connector detected; please check the connector and cable.
TEMP OVER ERR	The internal temperature is too high, please cool down.
CONTROL FAILURE	The processor cannot control the feeding current, please repair it.

SPECIAL FEATURES

Optimized Operating software

B6SAC features the so-called AUTO function that set the feeding current during the process of charging or discharging. Especially for Lithium atteries, it can prevent the overcharging which may lead to an explosion due to the user's fault. It can disconnect the circuit automatically and alarm once detecting any malfunction. All the programs of this product were controlled through two way linkage and communication, to achieve the maximum safety and minimize the trouble. All the settings can be configured by users!

Internal independent lithium battery balancer

B6SAC employs an individual-cell-voltage balancer. It isn't necessary to connect an external balancer for balance charging.

Balancing individual cells battery discharging

During the process of discharging, B6SAC can monitor and balance each cell of the battery individually. Error message will be indicated and the process will be ended automatically if the voltage of any single one cell is abnormal.

Adaptable to various types of lithium batteries

B6SAC is ada table to various t es of Lithium batteries, such as LiIon, LiPo and the new LiFe series of batteries.

Fast and storage mode of lithium batteries.

Purposes to charge Lithium battery varies, 'fast' charge reduce the duration of charging, whereas 'store' state can control the final voltage of your battery, so as to store for a long time and protect useful time of the battery.

Maximum safety

Delta-peak sensitivity: The automatic charge termination program based on the principle of the Delta-peak voltage detection. 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 in the 'AUTO' charging mode.

Capacity limit

The charging capacity is always calculated as the charging current multiplied 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 optional temperature probe, which is not included in our package.

Processing time limit

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

Input power monitoring

To protect the car battery used as DC input power from being damaged, its voltage keeps being Monitored. If it drops below the lower limit, the process will be ended automatically.

Date store/load

The maximum five batteries' date can be stored for user's convenience. You can keep the date pertaining to program setting of the battery of continuous charging or discharging. Users can call out these date at anytime without any special program setting.

WARNING AND ERROR INFORMATION

B6SAC incorporates a variety of functions for the systems to varify processes and the state of the electronics. In case of an error the screen will display the cause of 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	Erroneous selection of voltage of Lithium pack, please check the voltage of the battery pack.
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 batter pack.

`End Voltag 12.6v(3s)`

It comes to the final voltage when the program ended.

◄DEC

`Capacity Cut-Off On 5000mAh`

◄DEC

`Safety Timer ON 200min`

◄DEC

`USB/Temp Select USB Enabled`

3-pin connector is selected to be the USB port.

◄DEC

`Ext.Temp 26C`

The external temperature is displayed when the temperature probe is used.

◄DEC

`IN Power Voltage 12.56V`

Present input voltage.

`4.14 4.16 4.09 0.00 0.00 0.00`

The battery is connected with each port through cable; you can check voltage of each cell in the battery pack. When the cable is connected with the ports on the right of the charger, the program will display voltage of up to 6 batteries. The battery pack needs an output connector connected with each cell.

Cyclic charging/discharging

1 to 5 cyclic and continuous process of charge＞discharge or discharge＞charge is operable for battery refreshing and Balancing to stimulate the battery's activitly.

LCD screen

AC input power port
(AC 100-240V, 50/60HZ)

B6SAC

Professional Balance Charger/Discharger

Built-in AC/DC Adapter

LiPo   BALANCE
5.0A   22.2V(6S)

Li-ion/LiPo/LiFe : 1-6 cells   NiCd/NiMH: 1-15 cells
Pb: 2-20 V . Charge Rate: 0.1-6 A . Discharge Rate: 1 A.

Output charge lead
4mm banana plug

Input power cable
11-18V DC

Balance lead sockets
JST-XH port

.Scroll through the Main Menu
.Stop any charge processes

.Resume or start charge processes
.Confirm an action

Alter values
See the status of individual
cells in balance charge mode

LOAD DATA PROGRAM

This program is to load the data stored at the 'save data' program. Press START/ENTER key to make the data field blink and press INC or DEC for more than 3 seconds load the data.

PROGRAM SELECT
    LOAD DATA

Start
Enter

LOAD [01] NiMH
 14.4V   3000mAh

Choose the data number you want to call back. The data you want to call back will displayed.
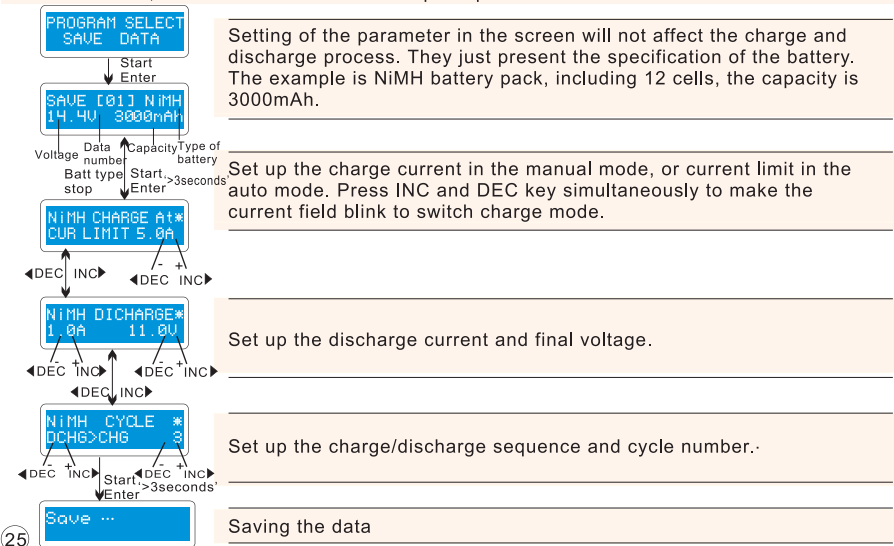
Start
Enter   '>3seconds'

Load ...

Loading the data.

VIRIOUS INFORMATION IN THE PROGRAM

You can inquire various information on the LCD screen during the charging and discharging process. Press DEC key, the charger will display users' setting. You can press INC key to monitor voltage of each cell while the battery is connected with each port of the charger.
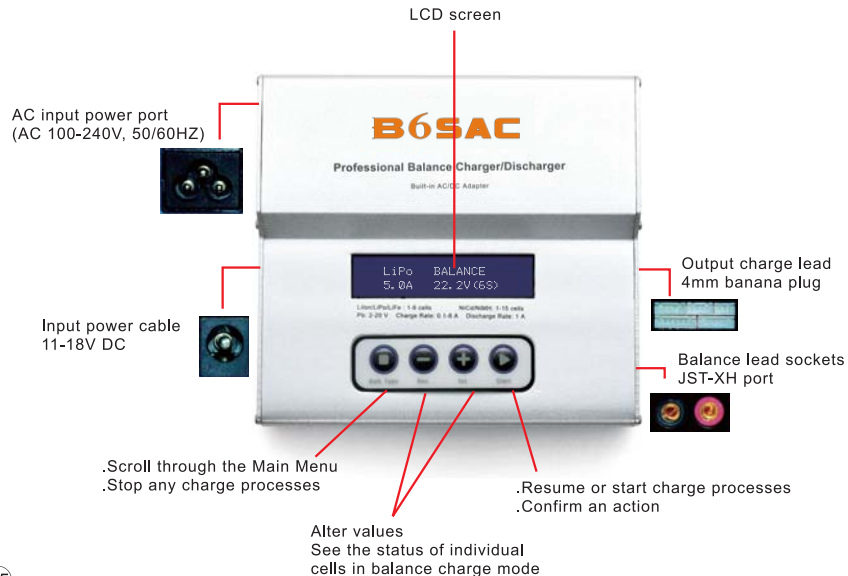
DATA STORAGE PROGRAM

For your convenience, B6SAC has a date storage and load program. It can store five battery date representing the respective specifications of batteries. You can call back the data when charging or discharging without setting up the program again. Press START/ENTER key to make it blink, and use INC or DEC to set up the parameter.

```
PROGRAM SELECT
  SAVE  DATA
```
Start
Enter

Setting of the parameter in the screen will not affect the charge and discharge process. They just present the specification of the battery. The example is NiMH battery pack, including 12 cells, the capacity is 3000mAh.

```
SAVE [01] NiMH
14.4V  3000mAh
```
Voltage | Data number | Capacity | Type of battery
Batt type stop | Start Enter >3seconds

Set up the charge current in the manual mode, or current limit in the auto mode. Press INC and DEC key simultaneously to make the current field blink to switch charge mode.

```
NiMH CHARGE At
CUR LIMIT 5.0A
```
◄DEC INC► ◄DEC INC►

```
NiMH DICHARGE
1.0A    11.0V
```
◄DEC INC► ◄DEC INC►
◄DEC INC►

Set up the discharge current and final voltage.

```
NiMH  CYCLE
DCHG>CHG      3
```
◄DEC INC► ◄DEC INC►
Start Enter >3seconds

Set up the charge/discharge sequence and cycle number.·

```
Save ...
```

Saving the data

LITHUM POLYMER BALANCE CHARGE PROGRAM CONNECTION DIAGRAM

This diagram shows the correct way to connect your battery to the B6SAC charger while in the Balance charge program mode only.

⚠ WARNING:

Failure to connect will damage this charger. The right approach is as follows:

*The main battery leads must be connected along with the balance lead connector as shown before charging your battery.

⚠ WARNING:

❗ If using crocodile clips shown in above diagram, make sure they are unable to touch Together!
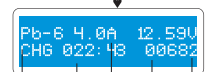
⚠ WARNING AND SAFETY NOTES

These warnings and safety notes are particularly important. Please follow the instructions For maximum safety; Otherwise the charger and the battery can be damaged or at worst it can 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 11-18V DC**

❗ **This charger and the battery should be put on a heat-resistant, noninflammable and nonconductive surface. Never place them on a car seat, carpet or similar. Keep all the inflammable volatile materials away from 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. It can cause fire or explosion due to overcharging. This warranty is not valid for any damage or subsequent damage arising as a result of misuse of failure to observe the procedures outlined in this manual.**

CHARGING OF THE Pb BATTERY

```
Pb CHARGE
4.0A   12.0V(6P)
```

◀DEC INC▶   ◀DEC INC▶
Batt type   Start   '>3 seconds'
Stop   Enter

Set up the charge current on the left and nominal voltage on the right. Range of current is 0.1-5.0A, the voltage should match the battery being charged. Press START/ENTER key for more than 3 seconds to start charging.

```
Pb-6 4.0A  12.59V
CHG 022:43  00682
```

Battery Elapsed Battery Charged
type   time   voltage capacity
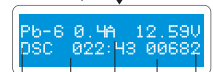   Charge
         current

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

DISCHARGING OF THE Pb BATTERY

```
Pb DISCHARGE
1.0A   12.0V(6P)
```

◀DEC INC▶   ◀DEC INC▶
Batt type   Start   '>3 seconds'
Stop   Enter

Set up the charge current on the left and nominal voltage on the right. Range of discharge current is 0.1-5.0A, the voltage should match the battery being charged. Press START/ENTER key for more than 3 seconds to start charging.

```
Pb-6 0.4A  12.59V
DSC 022:43 00682
```

Battery Elapsed Battery   Discharged
type   time   voltage   capacity
         Discharge
         current

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

CHARGE/DISCHARGE AND DISCHARGE/CHARGE CYCLE OF NiCd/NiMH BATTERY
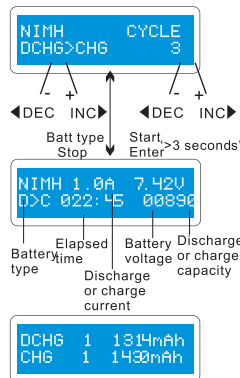
You can set up sequence on the left and the number of cycles on the right. You can balance, refresh and break-in the battery with this function. You can set a temporary cool-off procedure in the user's setting. Range of the cycle number is 1-5.

Press BATT TYPE/STOP key to stop program, you can press START/ENTER key to alter charge current. The sound indicates the end of program.

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

Pb(LEAD-SULPHURIC ACID) BATTERY

This program is only suitable for charging Pb (lead-acid) battery with nominal voltage from 2 to 20V. Pb (lead-acid) battery is completely different from NiCd/NiMH battery. 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 battery can not be used for fast-charging, please follow the instructions provided by the battery manufacturer.
You can press START/ENTER key to make it blink and alter the value of parameters using INC or DEC key, press START/ENTER key to store the value.

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 cut off 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 cut off level: 2.0V/cell or higher
Pb	Voltage level: 2.0V/cell (Lead-acid) Max. charge voltage: 2.46V/cell Allowable fast charge current: 0.4C or less Discharge voltage cut off level: 1.75V/cell or higher

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

❗ **Do not connect more than one battery pack to this charger at any one time.**

❗ **Never attempt to charger or discharger 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 (Explosion hazard).**
>
> **Batteries that require a different charge technique from NiCd, NiMh, LiPo or Gel cell(Pb, Lead acid).**
>
> **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.**

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

DISCHARGE OF NiCd/NiMH BATTERY

```
NIMH DISCHARGE
1.0A        11.5V
```
◀DEC INC▶   ◀DEC INC▶

Batt type / Stop   Start Enter '>3 seconds'
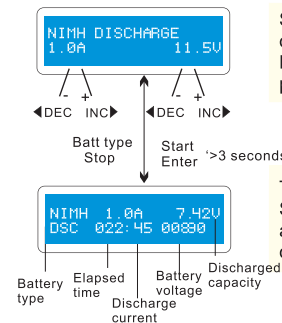
Set charge current on the left and the final voltage on the right. Range of the charge current is 0.1-1.0A; range of final voltage is 0.1-25.0V. Press START/ENTER key for more than 3 seconds to start the program.

```
NIMH 1.0A   7.42V
DSC  022:45 00800
```
Battery type   Elapsed time   Discharge current   Battery voltage   Discharged capacity

The screen indicates the discharging state. You can press START/ENTER key to alter discharge current. Press START/ENTER again to store the value. Press BATT TYPE/STOP key to stop discharging. The emitted sound alerts the end of discharging.

VOLTAGE BALANCING AND MONITORING IN THE DISCHARGE PROCESS

The processor monitors voltage of each cell when the battery packs are during its 'storage' and 'discharging' process. The achieve this feature, plug each battery to the charger individually. If voltage of any cell is abnormal, B6SAC will show error massage and terminate the program forcibly. So if there is battery damage or disconnection, you can see the error message and press INC to know which cell is damaged.

```
BATTERY VOL. ERR
 CELL  LOW VOL
```

The processor detects voltage of one cell is too low.

INC ▶

```
4.14 4.16 4.09
2.18 0.00 0.00
```

The 4th cell was damaged. The value of voltage may be zero if disconnection occurs.

DISCHARGE OF NiCd/NiMH BATTERY

```
NIMH CHARGE
CUR LIMIT 5.0A
```

This program is for charging and discharging of NiCd/NiMH batteries associated with R/C models applications. You can press START/ENTER key to make it blink and then INC or DEC to change the parameter value. Press START/ENTER key to store the value.

◀DEC INC▶ ◀DEC INC▶

Batt type
Stop

Start
Enter

'>3 second

```
NIMH 2.0A  7.42V
CHG 022:45 00890
```

Battery
type

Elapsed
time Charge
current

Battery
voltage

Charged
capacity

This program charge the battery using the current you set up. In this mode, it will charge with the current you set. You can make it blink in the current field and press INC and DEC at the same time to switch mode.

⚠ 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 cells 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 points in the circuit.**

⚠ charging:

During 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 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, recommended charging current and charging time. Especially, the Lithium battery should be charged according the charging instruction provided by the manufacturer strictly.

Attention should be paid to the connection of Lithium battery expecially.

Do not attempt to disassemble the battery pack arbitrarily.

Please get highlighted that Lithium battery packs can be wired in parallel and in series. In the parallel connection, the battery's capacity is calculated by multiplying single battery's capacity by the number of cells with total voltage stay the same. The voltage's imbalance may cause fire or explosion. Lithium battery is recommended to charge in series.
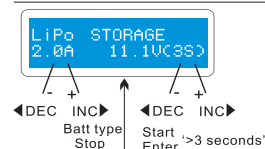
⚠ Discharging:

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

Some rechargeable batteries have a memory effect. If they are partly used and echarged before the whole charge is accomplished, they remember this and will only use that part of their capacity next time. This is 'memory effect' It is said that NiCd and NiMH batteries are suffering from memory effect. NiCd has more memory effect than NiMH.
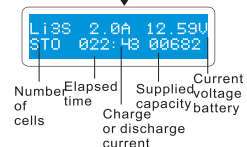
Lithium batteries are recommended to be discharged partially rather than fully discharged. Frequent full discharging should be avoided if possible. Instead, charge the battery more often or use a battery of larger capacity. Full capacity cannot be used until it has been subjected to 10 or more charge cycles. The cyclic process of charge and discharge will optimize the capacity of battery pack.

11

```
LiPo  STORAGE
2.0A   11.1V(3S)
```

– +   – +
◀DEC INC▶   ◀DEC INC▶
  Batt type   Start
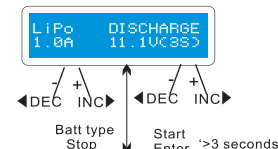   Stop   Enter '>3 seconds'

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 of 'storage' state.
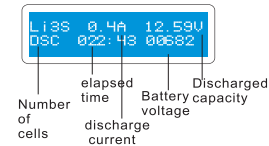
```
Li3S  2.0A 12.59V
STO 022:43 00682
```

Number of cells | Elapsed time | Charge or discharge current | Supplied capacity | Current voltage battery

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

DISCHARGE OF LITHIUM BATTERY

```
LiPo    DISCHARGE
1.0A   11.1V(3S)
```

– +   – +
◀DEC INC▶   ◀DEC INC▶
  Batt type   Start
   Stop   Enter '>3 seconds'

The value of 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 STAR/ENTER for more than 3 seconds to start charging.

```
Li3S  0.4A 12.59V
DSC 022:43 00682
```

Number of cells | elapsed time | discharge current | Battery voltage | Discharged capacity

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

20

FAST CHARGING OF LITHIUM BATTERY

```
LiPo   FAST CHG
2.0A  11.1V(3S)
```

◀DEC INC▶   ◀DEC INC▶

Batt type
Stop

Start
Enter   '>3 seconds'
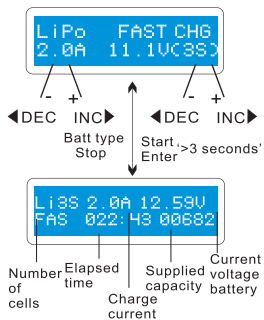
Charging current will become lower when it progress to the end of charging. A specific CV process will be reduced to end the charging process earlier. In fact, the charging current will goes to 1/5 when the charging process comes to 1/10. Charging capacity will be a little smaller than normal charging, but charging time will be shortened accordingly.

You can set up the charging current and voltage of the battery pack. Press START/ENTTER key to display voltage confirmation. Then press START/ENTER key again to confirm and begin to charge.

```
Li3S 2.0A 12.59V
FAS 022:43 00682
```

Number of cells
Elapsed time
Charge current
Supplied capacity
Current voltage battery

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

STORAGE CONTROL OF LITHIUM BATTERY

This function is for charging/discharging batteries which are not used at once. This program is designed for charging or discharging of batteries of specific original state. They are classified by types: 3.75V LiIon, 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.
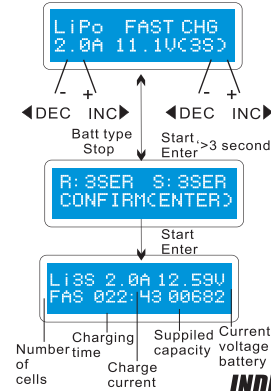

⚠ Program flow chart
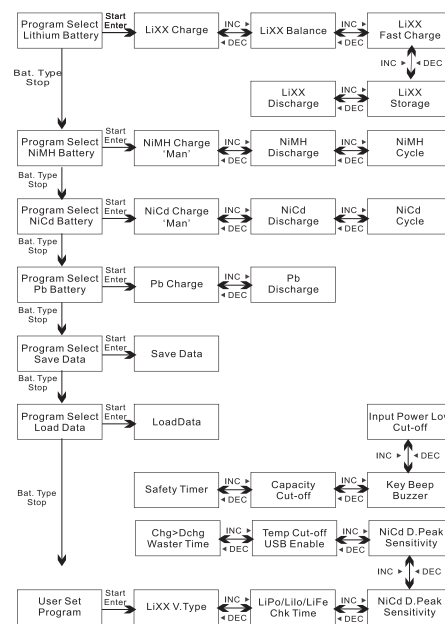
As default this charger will be set to typical user setting when it is connected a 12V battery for the first time. The screen displays the following information in sequence and the user can charge the parameter on each screen.

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

```
LiPo FAST CHG
2.0A 11.1V(3S)
```

◀DEC INC▶   ◀DEC INC▶
- +   - +
Batt type   Start
Stop   Enter >3 seconds'

```
R:3SER  S:3SER
CONFIRM(ENTER)
```

Start
Enter

```
Li3S 2.0A 12.59V
FAS 022:43 00682
```

Number   Charging   Suppiled   Current
of   time   capacity   voltage
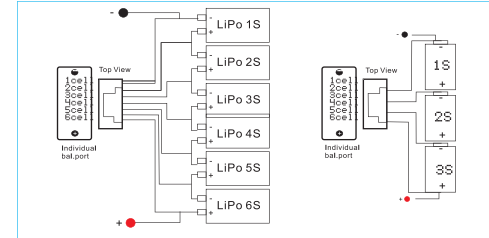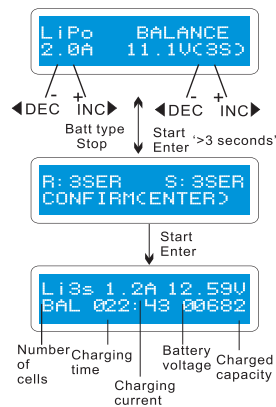cells   Charge   battery
         current

The value on the left side of the second lines sets the charge current. The value on the right side of the second lines sets the battery pack's voltage. After setting current and voltage, press STAR/ENTER for more than 3 seconds to start the process.

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 at the previous screen. If both numbers are identical you can start charging by press START/ENTER button. If not, press BATT TYPE/STOP button to go back to previous screen to carefully check the number of cells of the battery pack before going ahead.

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

INDIVIDUAL CELL CONNECTION DIAGRAM(PIN-ASSIGNMENT OF 8-PIN)

Top View
LiPo 1S
LiPo 2S
LiPo 3S
LiPo 4S
LiPo 5S
LiPo 6S
Individual bal.port

Top View
1S
2S
3S
Individual bal.port

CHARGING OF LITHIUM BATTERY

```
LiPo    BALANCE
2.0A   11.1V(3S)
```
◀DEC INC▶   ◀DEC INC▶

Batt type / Stop   Start Enter '>3 seconds'

The left side of the first line shows the type of battery you choose. The value on the left of the second line of the charger is current user set. After setting the current and voltage, press START/ENTER key for more than 3 seconds to start the process. (charge current: .1-5.0A, voltage: 1-5V).

```
R:3SER   S:3SER
CONFIRM<ENTER>
```

Start Enter

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 sells set by you and the previous screen. If both numbers are identical you can start charging by press START/ENTER button. If not, press BATT TYPE/STOP button to go back to previous screen to carefully check the number of cells of the battery pack before going ahead.

```
Li3s 1.2A 12.59V
BAL 022:43 00682
```

Number of cells   Charging time   Battery voltage   Charged capacity

Charging current

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

CHARGING LITHIUM BATTERY IN THE BALANCE MODE

This function is for balancing the voltage of Lithium-polymer battery cells while charging. In the balance mode, the battery needs to have a balance lead to connect to the individual port at the right side of the charger. And you need to connect the battery□s output plug to the output of charger.
Charging in this mode is different from the normal modes, because the built-in processor monitors voltage of individual cell and control input current fed into each cell to normalize the voltage.

```
LiFe
V.Type  3.3V
```
◀DEC INC▶   ◀DEC INC▶
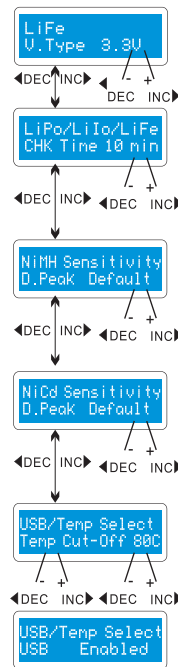
The screen shows the nominal voltage of Lithium battery. There are three kinds of Lithium battery: LiFe(3.3V),LiIo(3.6V) or LiPo(3.7V). This information is of critical importance that you have to check the battery carefully to make sure it is set up correctly. If it is different from correct value, explosion can occur during charge process.

```
LiPo/LiIo/LiFe
CHK Time 10 min
```
◀DEC INC▶   ◀DEC INC▶

To avoid from erroneous setting by users, B6SAC detects the cell count of Lithium battery automatically at the beginning of charge or discharge process. But battery that is deep-discharged can□t be detected correctly. To avoid this error, the time term can be set to verify the cell count by the processor. Normally, 15 seconds are enough to detect the cell count correctly. You need to extend the time term limit for the battery of large capacity. But the charge or discharge process may come to an end within the time term because of the time limit decided by the wrong count if you set too long time limit for the battery of small capacity. This may cause fatal error. You have to extend the time term if the processor detect the cell count incorrectly at the beginning of charge or discharge process. Otherwise, default value is recommended to use.

```
NiMH Sensitivity
D.Peak Default
```
◀DEC INC▶   ◀DEC INC▶

```
NiCd Sensitivity
D.Peak Default
```
◀DEC INC▶   ◀DEC INC▶

This shows the trigger voltage for automatical charge termination of NiMH and NiCd battery. The valid value ranges from 5 to 20 mV per cell. Setting the trigger voltage higher brings a danger of overcharging; whereas setting it lower brings a possibility of premature termination. Please refer to the technical specification of the battery. (NiCd default: 12mV, NiMH defalt: 7mV)

```
USB/Temp Select
Temp Cut-Off 80C
```
◀DEC INC▶   ◀DEC INC▶

```
USB/Temp Select
USB   Enabled
```

There is a 3-pin port on the left of the charger used as USB interface of temperature sensor port. If the screen displays temperature, you can use the optional temperature probe to connect to the surface of the battery. If it is set as the USB port, you can connect the charger to your PC through the optional USB cable to monitor the charging process through optional software.
The maximum temperature of the battery can be set during the charge process. The process will be terminated automatically to protect battery once the temperature of battery reaches this value. This feature is accomplished through temperature probe (optional).

◀DEC INC▶

Waste time
CHG/DCHG 5min

◀DEC INC▶ ◀DEC INC▶
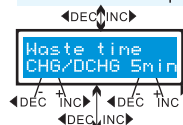
The battery becomes warm after cycles of charge/discharge process. The program will insert a time delay after each charge/discharge process to allow the battery enough time to cool down before beginning next cycle of charge/discharge process. The valid value ranges from 1to 60 minutes.

◀DEC INC▶

Safety timer
ON   120min

◀DEC INC▶ ◀DEC INC▶
◀DEC INC▶
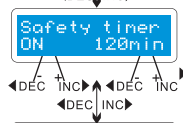
When the charge process starts, the integrated safety timer starts to run simultaneously. If error detected or the termination circuit can not detect whether the battery is fully charged or not. This unit is programmed to prevent overcharging. Please refer to the below statement to calculate the timer you set.

Capacity Cut-Off
ON   5000mAh

◀DEC INC▶ ◀DEC INC▶
◀DEC INC▶
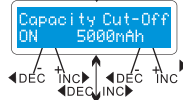
The program provides maximum capacity protection function. If the Delta-peak voltage can not be detected or the safety timer times out, the charge process will stop automatically, when the battery reaches the user-set maximum charge capacity.

Key Beep ON
Buzzer   ON

◀DEC INC▶ DEC INC▶

The beep to confirm users' operation sounds every time a button is pressed. The beep tor melody sounds at various times during operation to confirm different mode change. These functions can be switched on or off.

◀DEC INC▶

Input po   low
Cut-Off 10.0V

◀DEC INC▶

This function monitors the voltage of the input battery used to power this charger. If the voltage is lower than user-set value, the program will end forcibly to protect the input battery.

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 safetl timer setting. If the charger stopped 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

Lithium (LiIo/LiPo/LiFe) program

The program is only suitable for charging/discharging Lithium-polymer batteries with a nominal voltage of 3.3/3.6/3.7/cell. Different batteries have different charge technique. 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; it should precisely match the voltage of the battery: LiPO is 3.6V, LiIon is 4.1V and LiFE is 3.6V. the current and voltage of the battery should be correctly set.
When you want to change the values of parameters, please press START/ENTER key to make it blink and then use DES or INC to change the value. Then press START/ENTER key again to store the value.