# EV-PEAK

## TOUCH SCREEN

## A9

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EV-PEAK ELECTRONIC TECHNOLOGY
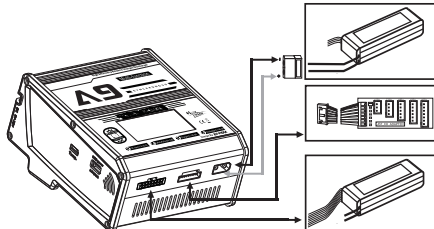
## INSTRUCTION MANUAL

## Specifications

| | | |
|---|---|---|
| Input Voltage | [DC] | 15.0 - 32.0 V |
| Charge Current | [A] | 0.1 - 25.0 |
| Discharge Current | [A] | 0.1 - 25.0 |
| Charge Power | [W] | 1350W |
| Discharge Power | [W] | 100W |
| Regenerate Discharge | [W] | max.1350 |
| Balance tolerance | [V] | ±0.01 |
| Balance current | [mA] | max.1000 |
| Charging Capability | NiMH/NiCd | 1 - 30 cells |
| | LiPo/LiFe/LiIon/LiHv | 1 - 8 series /12series |
| Pb battery voltage | [V] | 2 - 40 |
| Digital power | [V] | 5 - 50.4 |
| Weight | [g] | 1450 |
| Dimensions | [mm] | 154x162x84 |

## Connection

Connection diagram in the balance charging /storage/discharge mode

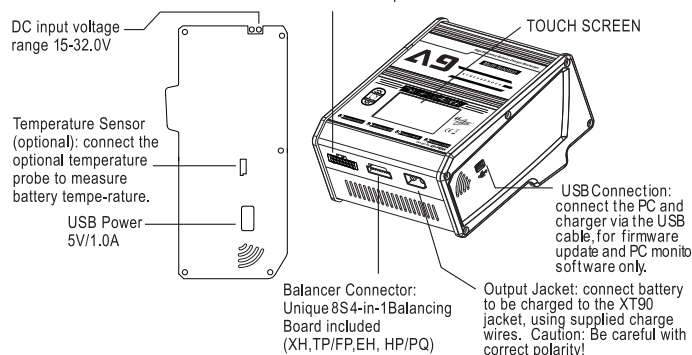WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating.

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

CAUTION: Always ensure the battery you are charging meets the specifications of this charger and that the charger setting sare correct. Not doing so can result in excessive heat and other related product malfunctions, which can lead to user injury or property damage.

**Note: the 12S and 8S balance port cannot be used at the same time!**
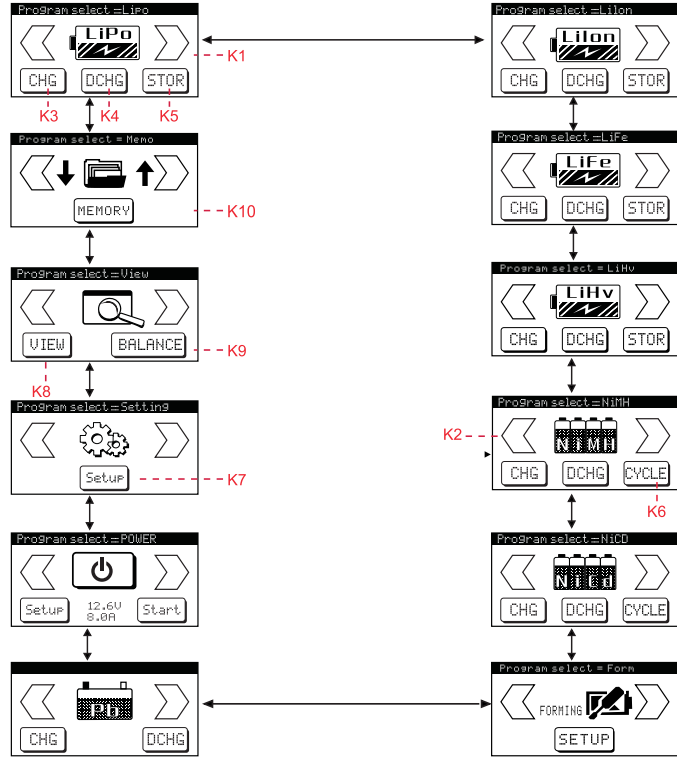
### Exterior:

DC input voltage range 15-32.0V

Balancer Connector: 12S Balancce port

TOUCH SCREEN

Temperature Sensor (optional) connect the optional temperature probe to measure battery tempe-rature.

USB Power 5V/1.0A

Balancer Connector: Unique 8S4-in-1Balancing Board included (XH,TP/FP,EH, HP/PQ)

USBConnection: connect the PC and chargervia the USB cable,for firmware update and PC monitor software only.

Output Jacket: connect battery to be charged to the XT90 jacket, using supplied charge wires. Caution: Be careful with correct polarity!

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

1、Connect charger to power source
2、Connect balance adapter to charger
3、Connect battery to balance adapter
4、Connect charger and battery with main charging cable
5、Make program selection in the charger for battery charging
6、Start to charge battery

## Main Screen

After power on the charger,you can see the main menu,press the arrow key to check the LiPo/LiIon/LiFe/LiHV /NiMH/NiCd/Pb/Digital Power/Setup/Data View functions.

Program select=Lipo — K1

LiPo
CHG  DCHG  STOR
K3  K4  K5

Program select=LiIon
LiIon
CHG  DCHG  STOR

Program select=Meno — K10
MEMORY

Program select=LiFe
LiFe
CHG  DCHG  STOR

Program select=View — K9
VIEW  BALANCE
K8

Program select=LiHv
LiHv
CHG  DCHG  STOR

Program select=Setting — K7
Setup

Program select=NiMH
NiMH
CHG  DCHG  CYCLE
K2 — K6

Program select=POWER
Setup  12.6V 0.0A  Start

Program select=NiCd
NiCd
CHG  DCHG  CYCLE

CHG  DCHG
Pb

Program select=Form
FORMING
SETUP

**K1:** Select the battery type or program
**K2:** Select the battery type or program
**K3:** Enter into the charging setup menu
**K4:** Enter into the discharging setup menu
**K5:** Enter into the storage setup menu
**K6:** Enter into the cycle mode
**K7:** Enter into the advanced setup mode
**K8:** Enter into the data view mode
**K9:** Enter into the balancer mode
**K10:** Enter into memory mode

## Initial parameter set up

Tips: please set up correctly in the "user set" menu before into the job for the first time you use it

This charger can recognise the cell count of Lithium battery automatically. for the battery voltage lower than the lowest safety voltage,charger will not start the charge process. But this charge has a precharge function to restore the battery.you can set the restore time(normally off ) in the menu.then precharge program will start-up. The more capacity of the battery is,the more time it will need Attention:In the normal charge mode,you need to turn off the precharge process.DO NOT use this function unless you know the battery status very well.If the battery voltage increase very few,please stop the precharge process immediately.or it will causea danger!!!

Program select=Setting
Setup

USER SETUP [1/4]
Precharge Time        OFF
Temp mode             60℃
Temp.cut-off          11.0V
Input Cut-off         AUTO
Input Limited
ESC  ▲  ▼  Enter
S1  S2  S3

OFF: 10 min
°C / F
30°C~80°C( 68F~176F)
15.0V~32.0V
1.0A~55.0A/AUTO

**S1:** Dec./Up  **S2:** Inc./Down  **S3:** Select/Enter

Press here to check the other setting items

USER SETUP [2/4]
Safety Timer     240min
Back light       100%
Melody/Full      ON
Button sound     ON
Buzzer sound
ESC  ▲  ▼  Enter

1min ~720 min
0%~100% ( LCD lighteness adjustment)
1-5 (different melodies)

USER SETUP [3/4]
Balance Force:   Auto
Full Force       Auto
DCHG Mode        CC
ESC  ▲  ▼  Enter

Regenerative DCHG SET
Regenerative :   OFF
Regen.Curr in:   -1.0A
End Volt.        14.7V

USER SETUP [4/4]
< --REGEN. DCHG SET --
< --FACTORY RESET --
ESC  ▲  ▼  Enter

You can set the user name or somether informations here. then your setting will be showed once the charger power on

You can reset all the setting to factory reset here !

Firmware Version:1.00
ESC              Enter

FACTORY DEFAULTS
Are you sure you want to Reset?
YES    NO

Pls DO NOT use this function unless you are sure that you need the factory reset.

## Lithium batteries program

The charger can accept four types of Lithium batteries:LiPo/LiIo/ LiFe /LiHV ; you have to check the battery carefully and set it up correctly, or it will cause a explode!

Program select =Lipo
LiPo
CHG  DCHG  STOR

Notice: charger will set the charge current according a rate of 1C automatically when you set the capacity of the battery pack.If you charge a high-rate battery pack,you can set the value of the "Current" a little higher!

LiPo Charge set
Pack.Volt.         22.2V/6S
Capacity           6000mAh
Current            2.5A
End Volt.          4.20V/C
CHG mode           Balance
ESC  ▲  ▼  Enter
**Press Enter >2S=Start**

there are 2 modes for Lithium battery charging: Balance mode,NO balance mode

Start to charge/discharge: after setup the mode menu correctly, press touch key for more than 2 seconds to start the process.

LiPo Discharge set
Pack.Volt.         22.2V/6S
Capacity           6000mAh
Current            2.0A
End Volt.          3.00V/C
ESC  ▲  ▼  Enter
**Press Enter >2S=Start**

"Discharge mode" theoretically, Lithium battery do not need to discharge, especially deep-discharge. To avoid the overcharge of the individual battery, you should connect the balance plug of the battery to the charger, you can set the discharge cut-off voltage from 3.0V to 4.0V

LiPo Storage set
Pack.Volt.         22.2V/6S
Capacity           6000mAh
Current            2.0A
End Volt.          3.00V/C
ESC  ▲  ▼  Enter
**Press Enter >2S=Start**

"Storage mode " this is for charging or discharging Lithium battery not to be used for the time being. In order to reduce the wastage, you can select this mode to remain the powerto 40% to store. The final voltage are different from the typeof the battery, LiIo:3.75V,LiPo,LiHV:3.85V,LiFe:3.3V.This isan intellective program, If the voltage of battery at its initial stage is over the voltage level to storage, the program will start to discharge,and if it is lower, the program will start to charge automatically. In order to ensure each battery meets the demand, you should connect the battery pack to the balance port of the charger
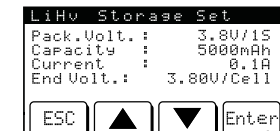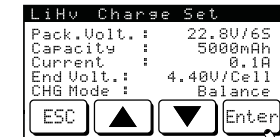
Record the elapsed time of charging/discharging

6S XXX 000:00s
Capacity    :    00000mAh
Current     :    10.0A
Voltage     :    25.00V
Resistance  :    Mo
Peak Temp.  :    No sens
STOP  Unit  Graph

Internal resistance of the battery pack
Peak temperature which measured by the temperature sensor

6S XXX 000:00s
Input Volt   :   14.91V
End Volt.    :   12.60V
Int Temp     :   34℃
Safety Timer :   240min
CAPA Cut-off :   2500mAh
STOP  Unit  Graph

- Resistance -
Main : 30 MΩ
1>2.5  2>2.5  3>2.5
4>2.5  5>4.5  6>5.5
7>4.5  8>5.5  9>--
10>--  11>--  12>--

DataLipo=Graph
25.20V    000:00S

"Back": Go back to the charge menu

Here you can view the curve voltage for charging or discharging

## LiHv battery Program

CAUTION: make sure the battery which you want to be used is the High Voltage LiPo battery, otherwise it will cause overcharge and may result in excessive heat,fire and serious injury!
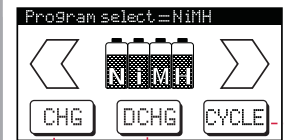
Program select =LiHv
LiHv
CHG  DCHG  STOR

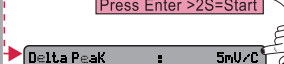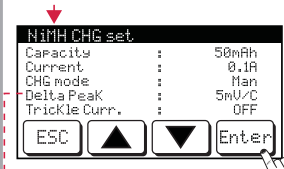LiHv operation is same as LiPO program,only END VOLTAGE VALUE different.

CAUTION:follow the battery factory indication to set the right end voltage,otherwise it may cause excessive heat,fire and serious injury!

LiHv Charge Set
Pack.Volt.         22.8V/6S
Capacity           5000mAh
Current            0.1A
End Volt.          4.40V/Cell
CHG Mode           Balance
ESC  ▲  ▼  Enter
**Press Enter >2S=Start**

LiHv Discharge Set
Pack.Volt.         3.8V/1S
Capacity           5000mAh
Current            0.1A
End Volt.:         3.30V/Cell
ESC  ▲  ▼  Enter
**Press Enter >2S=Start**

LiHv Storage Set
Pack.Volt.         3.8V/1S
Capacity           5000mAh
Current            0.1A
End Volt.:         3.80V/Cell
ESC  ▲  ▼  Enter
**Press Enter >2S=Start**

## Forming battery Program

Forming charge is a special function to reactive the NiMH/NiCd batteries which are long time not used.

Program select = Form
FORMING
SETUP

NiMH/NiCD Formine SET
Capacity    :    5000mAh
Current     :    100mA
Time limit  :    14hours
Trickle     :    OFF
ESC  ▲  ▼  Enter

## NiMH/NiCd battery program

Program select=NiMH
NiMH
CHG  DCHG  CYCLE

Tips: If the voltage of charging battery is lower than 2.5V,△V may can not be perceived, this will cause a danger of discharge.You can connect a temperature sensor or use the charger current above 1C to avoid it.

NiMH CHG set
Capacity     50mAh
Current      0.1A
CHG mode     Man
DeltaPeak    5mV/C
Trickle Curr. OFF
ESC  ▲  ▼  Enter
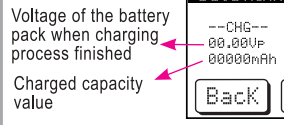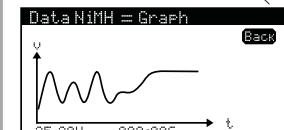**Press Enter >2S=Start**

Delta PeaK          5mV/C

"CHARGE" mode the default mode is "Man". In "Man"mode, it will charge the battery with the charge current you set at the display. But in "Auto" mode, you need to set the upper limit of charge current to avoid from higher feeding current that may damage the battery. Because some batteries of low impedance and small capacity can lead to the higher charge current by the processor at automatic charge mode.

the trigger voltage for automatic charge termination of NiMH and NiCd battery (△V), the effective value ranges from 5 to 20mV per cell. If △V is set higer, there is a danger of overcharging the battery; if it is set lower, there is a possibility of premature termination. please refer technical specification of the battery.(NiCd: 12mV,NiMH:7mV)

NiMH DCHG set
Capacity     1.2V/1S
Current      50mA
End Volt.    0.1A
              0.1V
ESC  ▲  ▼  Enter
**Press Enter >2S=Start**

"DISCHARGE" mode the discharge current ranges from 0.1Ato45.0A and the final voltage ranges from 0.1 to 24.0V,the operating method is similar as Lithium battery. The final voltage of NiMH battery is 1.0V/cell, and the NiCd is 0.85V/cell,please refer the recommend by the battery manufacturer.
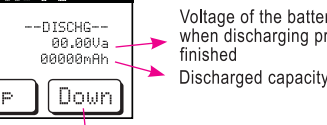
NiMH Cycle set[1/2]
Capacity     50mAh
CHG Curr.    0.1A
DCHG curr.   0.1A
DCHG End Volt 0.10V
ESC  ▲  ▼  Enter

"CYCLE" mode the charger can perform 1-5 cycles of DCHG >CHG or CHG>DCHG continually,You can select it for the new NI** battery or the long time laid NI** battery ,please set up carefully.or it will damage the battery! To set the parameter please follow the "Cycle set" menu.

NiMH Cycle set[2/2]
Mode         CHG>DCHG
Count        2 Times
Delay Timer  1min
ESC  ▲  ▼  Enter

When NiMH or NiCd battery is on the cyclic process of charge/discharge,It may become warm .the program insert a time delay function to allow the battery has enough time to cool down during the two cycle process. the value ranges from 1 to 60 minutes.if you are not sure, you can set it to time above 10 minutes.
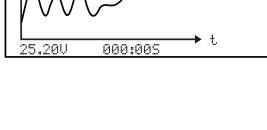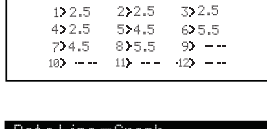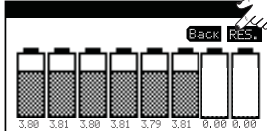
NiMH CHG 000:00s
Capacity    :    00000mAh
Current     :    10.0A
Voltage     :    25.00V
Resistance  :    Mo
Peak Temp.  :    No sens
STOP              Graph

NiMH CHG 000:00s
Input Volt   :   14.91V
Delta peak   :   12mV/C
Int Temp     :   34℃
Safety Timer :   240min
CAPA Cut-off :   2500mAh
STOP              Graph

Data NiMH = Graph
25.20V    000:00S

"Back": Go back to the charge menu

Here you can view the curve voltage for charging or discharging

NiMH Cycle 000:00s
Capacity    :    00000mAh
Current     :    10.0A
Voltage     :    25.00V
Resistance  :    Mo
Peak Temp.  :    No sens
STOP  Cycle  Graph

NiMH CHG 000:00s
Input Volt   :   14.91V
Delta peak   :   12mV/C
Int Temp     :   34℃
Safety Timer :   240min
CAPA Cut-off :   2500mAh
STOP              Graph

Data NiMH = Cycle 1/2
CHG-          DISCHG-
00.00V        00.00Va
00000mAh      00000mAh
Back  Up  Down

Voltage of the battery pack when charging process finished
Charged capacity value

Voltage of the battery pack when discharging process finished
Discharged capacity value

Check the previous cycle       Check the next cycle

# Pb battery program

This is programmed for charging Pb battery with nominal voltage from 2 to 24V, Pb battery can not be charged rapidly.they can only deliver relatively lower current compare to their capacity.the optimal charge current will be 1/10 of the capacity.please always follow the instruction supplied by the manufacturer of battery.
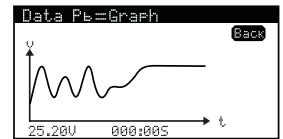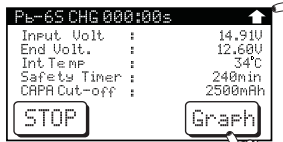
```
            Pb
 CHG              DCHG
```
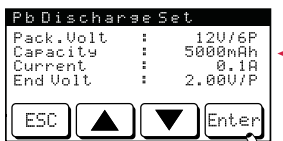
This Mode is for charging Pb battery ,As you can see on the screen,you can set up the charge current on the setting interface, you can set the voltage / capacity / current of the battery here.the charge current ranges from 0.1-45.0Aand the voltage should be matched with the battery being charged. start the charge process by pressing "Enter" key for more than 2 seconds.

```
Pb Charge Set
Pack.Volt  :  12V/6P
Capacity   :  5000mAh
Current    :  0.1A
End Volt   :  2.45V/P
 ESC    ▲    ▼    Enter
```
Press Enter >2S=Start

set the cell count,discharge current and battery capacity in this menu. The discharge current ranges from0.1-45.0A and the voltage should be matched with battery being discharged. start the discharge process by pressing "Enter" key for more than 2 seconds.

```
Pb Discharge Set
Pack.Volt  :  12V/6P
Capacity   :  5000mAh
Current    :  0.1A
End Volt   :  2.00V/P
 ESC    ▲    ▼    Enter
```
Press Enter >2S=Start

The screen shows the state of charging/discharging process.to stop the process pls press" ESC" key once.

```
Pb charge start
-Connect-        -CHecK-
Input ..... OK    Set  : 6P
BATT. ..... OK    Read : 6P
 ESC              Start
```
Press Start once

```
Pb-6S CHG 000.00s
Capacity    :  00000mAh
Current     :  10.0A
Voltage     :  25.00V
Reseistance :  1A
PeaK Temp.  :  No sens
 STOP            Graph
```

```
Pb-6S CHG 000.00s
Input Volt    :  14.91V
End Volt.     :  12.60V
IntTemp       :  34℃
Safety Timer  :  240min
CAPA Cut-off  :  2500mAh
 STOP            Graph
```

```
Data Pb=Graph          Back
V


25.20V   000:00S      t
```

# Digital power program

In this mode,charger can provide a output power of DC5.0V-50.4 V for the other electronic equipment

```
Program select=POWER
        ⏻
 Setup  30.0V   Start
        0.1A
         A0
```
Press Start >2S
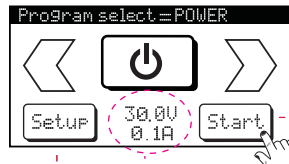
**A0:** In the digital power menu,charger will shows the parameters which user setted in the last time; if you do not need to modify the settings,pls press the START button directly for more than two seconds.
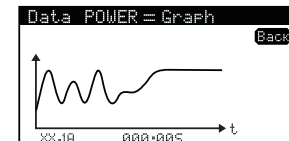
```
POWER Setup set
Out Volt.    22.2V
Current      10.0A
Max.power    0000W
 ESC   ▲    ▼    Enter
```
Press Enter >2S=Start
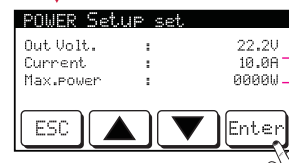
→ Set Max.current of output
→ Set Max.power of output

```
POWER Mode
Out Volt.   :    22.2V
Current     :    10.0A
Power       :    0000W
 STOP            Graph
```
→ The real-time output current
→ The real-time output power

Press "Graph" key to view the current curve

```
Data POWER = Graph     Back
V


XX.1A   000:00S      t
```
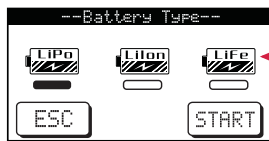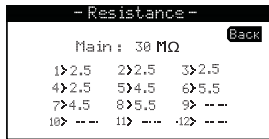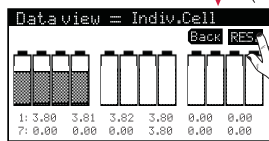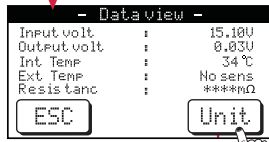
To stop the program, Prees "Back" to go to the previous interface and press "Stop" key

# Data view

With this program,you can check the total voltage,unit voltage and internal resistance of the battery pack,and check the inner temperature/exterior temperature of the charger also

```
Program select=View
         🔍
 VIEW          BALANCE
```

Tips: When press "view",charger will enter into the resistance measurement process for one time only. pls make sure you've connected the battery to the output jacket port of the charger.

```
- Data view -
Input Volt    15.10V
Output Volt   0.03V
Int Temp      34℃
Ext Temp      No sens
Resistanc     ****mΩ
 ESC            Unit
```

```
Data view = Indiv.Cell      Back  RES

1:3.80  3.81  3.82  3.80  0.00  0.00
7:0.00  0.00  0.00  0.00  0.00  0.00
```

```
- Resistance -           Back
       Main : 30 MΩ
1▷2.5   2▷2.5   3▷2.5
4▷2.5   5▷4.5   6▷5.5
7▷4.5   8▷5.5   9▷5.5
10▷ --- 11▷ --- 12▷ ---
```
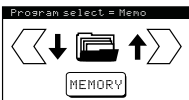
To stop the program, Prees "Back" to go to the previous interface and press "Stop" key

You can use the balance function for the unbalanced battery pack

Press "balance" to choose battery types. Then,press"Start" button to start balancing

```
--Battery Type--
 LiPo    LiIon   LiFe


 ESC            START
```

⚠ Please be sure to carefully check the battery type and setting, otherwise it may damage the battery .

# Memory battery Program

1.press the Left and Right Arrows on the LCD touch screen to scroll through the main menu screens until you reach the battery program you would like to save:Program Select=LiPo/ LiFe/LiIon/ LiHV/NiMH/NiCad/Pb
2.press the action at the bottom of the LCD touch screen to enter that menu
3.press the parameter to highlight that parameter
4.press the Up and Down Arrows to edit the parameter
5.press Enter to save the parameter
6.If there is more than one screen of parameters,press the top right corner of the LCD touch screen to scroll through the parameter screens.
7.Once the parameters are at the desired settings,press ESC to return to the main menu screens
8.Press the left and right arrows on the LCD touch screen to scroll through the main menu screens until you reach Program Select=Memory.

```
Program select = Memo

        MEMORY
```

9.Press Memory
10.Choose an empty memory profile and press it

```
Battery memory[1/4] ♥
M01  NULL
M02  NULL
M03  NULL
M04  NULL
M05  NULL
 ESC   DEL   LOAD   SAVE
```

11.press SAVE,the charging parameters you just entered will be saved in that memory profile.
12.To use a memory profile,press it,then press LOAD
13.To delete a memory profile,press it,then hold DEL
14.Press top right of the LCD Touch Screen to scroll through all 20 memory profiles.

# Charging Warnings

WARNING:Failure to exercise caution while using this product and comply with the following warnings could result in product malfunction,electrical issues,excessive heat,FIRE,and ultimately injury and property damage.
1.Never leave the power supply,charger and battery unattended during use.
2.Never attempt to charge dead,damaged or wet battery packs.
3.Never attempt to charge a battery pack containing different types of batteries.
4.Never allow children under 14 years of age to charge battery packs.
5.Never charge a battery in extremely hot or cold places or place in direct sunlight.
6.Never charge a battery if the cable has been pinched or shorted.
7.Never connect the charger if the power cable has been pinched or shorted.
8.Never connect the charger to an automobile 12V battery while the vehicle is running.
9.Never attempt to dismantle the charger or use a damaged charger.
10.Never connect the input jack(DC input ) to AC power.
11.Always use only rechargeable batteries designed for use with this type of charger.
12.Always inspect the battery before charging.
13.Always keep the battery away from any material that could be affected by heat.
14.Always monitor the charging area and have a fire extinguisher available at all times.
15.Always end the charging process if the battery becomes hot to the touch or starts to change form(swell)during the charge process.
16.Always connect the charge cable to the charger first,Then connect the battery to avoid short circuit between the charger leads.Reverse the sequence when disconnecting.
17.Always connect the positive red leads(+)and negative black leads(-)correctly.
18.Always disconnect the battery after charging, and let the charger cool between charges.
19.Always charge in a well-ventilated area.
20.Always terminate all processes and contact local dealer if the product malfunctions.
WARNING: Never leave charger unattended,exceed maximum charge rate,charge with non-approved batteries or charge batteries in the wrong mode.Failure to comply may result in excessive heat,fire and serious injury.
CAUTION: Always ensure the battery you are charging meets and specifications of this charger and that the charger settings are correct.Not doing so can result in excessive heat and other related product malfunctions,which can lead to user injury to property damage.

# Warning and error messages

The A9 is protected against faults and operator errors by the Multi-Protection-System. Faults/Errors are displayed on the LCD screen and they interrupt the active process to protect the unit and the battery.

```
⚠ [ERROR]
REVERSE POLARITY
   ESC
```
→ The output is connected to a battery with incorrect polarity

```
⚠ [ERROR]
PROCESS INTERRUPTED
   ESC
```
→ Not connected or connection interruption

```
⚠ [ERROR]
OUTPUT SHORT CIRCUIT
   ESC
```
→ Output short circuits

```
⚠ [ERROR]
INPUT VOLTAGE ERROR
   ESC
```
→ Input voltage error,below or over the limit of 11-18V
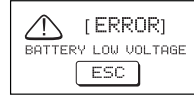
```
⚠ [ERROR]
CHARGER FAILURE
   ESC
```
→ Charger fault

```
⚠ [ERROR]
BATTERY LOW VOLTAGE
   ESC
```
→ Total voltage too low

```
⚠ [ERROR]
BATTERY HIGH VOLTAGE
   ESC
```
→ Total voltage too high

```
⚠ [ERROR]
CELL LOW VOLTAGE
   ESC
```
→ Unit cell voltage too low

```
⚠ [ERROR]
CELL HIGH VOLTAGE
   ESC
```
→ Unit cell voltage too high

```
⚠ [ERROR]
CELL CONNECT ERROR
   ESC
```
→ Balance port connection error

```
⚠ [ERROR]
CHARGER OVERHEATING
   ESC
```
→ Charge overheating

```
⚠ [ERROR]
— OVER POWER —
   ESC
```
→ Power exceed the limit in the digital power mode

```
⚠ [ERROR]
— MAX CURRENT —
   ESC
```
→ Current exceed the setting in the digital power mode

```
ⓘ
— SAFETY TIMER —
   ESC
```
→ Exceed the maximum safe time limit

```
ⓘ
— MAX CAPACITY —
   ESC
```
→ Exceed the maximum capacity limit

```
ⓘ
— MAX EXT.TEMP —
   ESC
```
→ External temperature too high

# After·sale service and guarantee

Thank you for purchasing the this balance charger ,We will do our best to provide you with a comprehensive after-sale service and protect your rights and interests .

We warrant this product for a period of one year from the date of purchase, if it has a quality problem itself, all guarantee will be free; In case customers can not provide an effective certificate of purchase, we will refer the date of machine's internal. If it is over one year since the purchase date, an appropriate cost will be charged, users need to bear the transportation cost back and forth. User disassembly, alteration, or damage caused by improper use,they should bear the maintenance and transport costs.

**COMPLIANCE INFORMATION FOR THE EUROPEAN UNION**

Declaration of Conformity

CE

Product(s):
Item Numer(s):                     Battery balance charger
                                   **A9**

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

EN 55014-1:2006
EN55014-2:1997+A1:2001
EN61000-3-2:2006
EN61000-3-3:2008

**Instructions for disposal of WEEE by users in the European Union**

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.