ENGLISH

Q6320AC
320W/80W X4

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INSTRUCTION MANUAL

### Perfomance   Parameter

Input Voltage	[AC]	110 or 220 V
	[DC]	11.0 - 18.0 V
Charge Current	[A]	0.1 - 7.0 x 4
Discharge Current	[A]	0.1 - 2.0 x 4
Charge Power	[W]	80 x 4
Discharge Power	[W]	10 x 4
Ebergy transfer discharge	[W]	max.320
Balance tolerance	[V]	±0.01
Balance current	[mA]	max.500
Charging Capability	NiMH/NiCd	1 - 16 cells
	LiPo/LiFe/Lilon	1 - 6 series
Pb battery voltage	[V]	2 - 20
Digital power	[V]	3 - 24
Weight	[g]	1750g
Dimensions	[mm]	240 x 223 x 67

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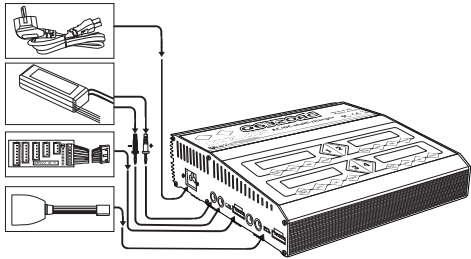
⚠ CAUTION: Always ensure the battery you are charging meets the specifications of this charger and that the charger setting sare correct. Not doing so can result in excessive heat and other related product malfunctions, which can lead to user injury or property damage.

Exterior:
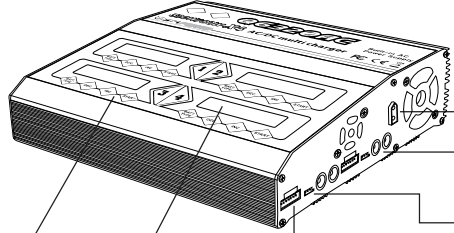
DC input voltage range 11-18.0V

Output Jacket: connect battery to be charged to the 4.0mm jacket, using supplied charge wires. Caution: Be careful with correct polarity!

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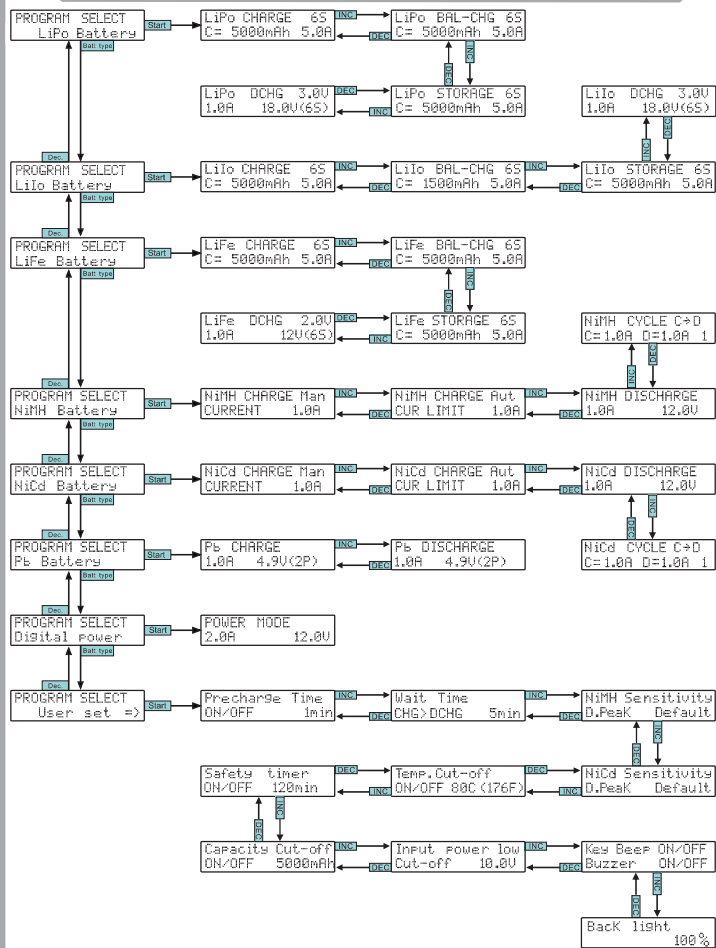
Button   LCD screen

Balancer Connector: high-performance integra-ted Lixx balancer for 2S to 6S packs using XHS balancing con nector.

⚠ 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. Make program selections in the charger for battery charging.
3. Connect balance adapters to charger.
4. Connect battery to charger adapters (connect main charging connectors before connecting cell-balancing connectors, where used).
5. Start battery charging.

Programming guide

Operating instructions

Main menu

Q6320AC
VISTA POWER

PROGRAM SELECT
User set =>

This shows you the type of charger for 2 seconds, press Enter/Start then enter into the main menu after self-check OK

User set program,press Mode/Esc key adown and Dec. key upward for circulatory choose.press Enter/Start key into submenu.

PROGRAM SELECT
Lixx Battery

Lithium battery program.

PROGRAM SELECT
NiMH Battery

NiMH battery program.

PROGRAM SELECT
NiCd Battery

NiCd battery program.

PROGRAM SELECT
Pb Battery

Pb battery program.

PROGRAM SELECT
Digital power

Tunable digital power mode,you can set the input power to a output power of 3.0V-24.0V

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
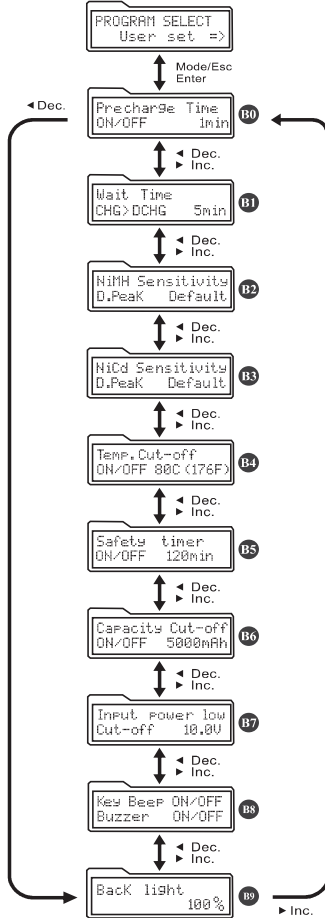
Press Mode/Esc key to the first screen on the left, then press Enter/Start key to enter the into parameter setting menu.

You can switched at the same level menu by Dec./Inc. key. please refer the detailed flow chart on the left

When you are willing to alter the parameter value in the program, press Enter/Start key to make it blink,then change the value with Dec./Inc. key. the value will be stored by press Enter/Start key once.

The charger accept three types of Lithium batteries:LiPo/Lilo/ LiFe ; you have to check the battery carefully and set it up correctly, or itwill cause a explode! (Please refer the table A)

This charger can recognise the cell count of Lithium battery automatically. for the battery voltagelower 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 2 minutes) in the ⓑ0 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 cause a danger!!!

When NiMH or NiCd battery is on the cyclic process of charge/discharge, It may become warm . The program insert a time delay to occur after each charge and discharge process to allow the battery adequate time to cool down before being subjected to the next process.(see the screen ⓑ1) the value ranges from 1 to 60 minutes.If you are not sure,you can set it over 10 minutes.t

ⓑ2 ⓑ3 shows 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)

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.

The 3-pin port on the left side of the unit is a temp. sensor port,you can set the max. safety temperature,(see the screen ⓑ4)then monitor the battery temp. via the temp. sensor.

When you start a charge process, the integral safety timer automatically starts running at the same time.this is programmed to prevent overcharge the battery if itproves to be faulty,or if the termination circuit cannot detect the battery full. ⓑ5 shows you this program can be on or off,and you can set the maximum safety time,the value ranges from 10 to 720min. As the same principle,there is a maximum-cap acity-limited function. See ⓑ6 , the value ranges from 100 to 25000mAh.

When you use the car battery to supply power for charger, screen ⓑ7 shows you this program monitors the voltage of input DC battery. If the voltage drops below the value you set the operation forcibly terminated to protect the input battery.

At the screen ⓑ8 you can set the audible sounds to be on or off by this program. You can adjust the brightness of LCD screen at the charger(see ⓑ9).

Please refer the information below(chart A), and select the correct parameter for each battery, or it will cause a serious result!

chart A

types iterm	Li-Po	Li-Io	Li-Fe	NiMH	NiCD	Pb
Standard voltage (V/cell)	3.70	3.60	3.30	1.20	1.20	2.00
Max. Charge voltage cut off level (V/cell)	4.20	4.10	3.60	1.60	1.60	2.45
Allowable fast current	<1C	<1C	<4C	<2C	<2C	<0.4C
Min.Discharge voltage cut off level (V/cell)	>3.00	>3.00	>2.00	>1.00	>0.85	>1.75

Lithium batteries program

PROGRAM SELECT
Li** Battery
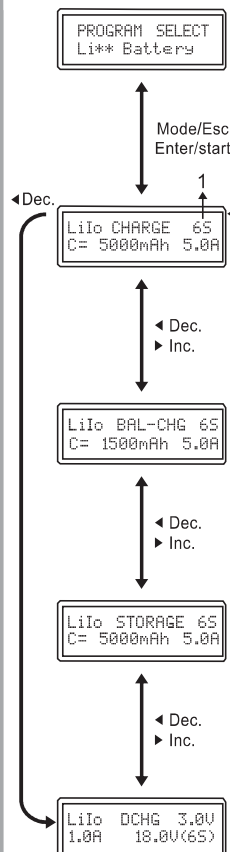
Press Mode/Esc key to the screen on the left, then press Enter/Start key to enter into the parameter setting menu. You can switched at the same level menu by Dec./Inc. key. Please refer the detailed flow chart on the left. When you are willing to alter the parameter value in the program, press Enter/Start key to make it blink, then change the value with Dec./Inc. key. the value will be stored by pressing Enter/Start key once. then press Enter/Start key for more than 2 seconds to start the process.

This mode is for individual battery or some special battery pack without balance port or cell count.1shows you the cell count number, C shows youthe capacity of the battery pack.

Notice:charger will set the charge current according to 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

"Balance charging" this is for 2-6 cells of Lithium battery with balance port, the battery pack being charged should have the individual cell connect, and connect it to the individual portat the right side of charger with a suitable connection cable that fits with your battery pack. (see picture B)In this mode, the charging process will be different from ordinary charging mode. the internal processor of the charger will monitor and control the voltage of each cell of the battery pack. This can improve the discharging performance of the battery! the charger use the optimised calculation to control the tolerance in the range of ±0.01V!

"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 power to 40% to store. The final voltage are different from the type of the battery, Lilo:3.75V /LiPo:3.85V /LiFe:3.3V. This is an 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, the individual plug of the battery pack should be connected to the individual port of charger.

"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 to 2.0V-4.0V

Start to charge/discharge: after set up the mode menu correctly, press Enter/Start key for more than 2 seconds to start the process .
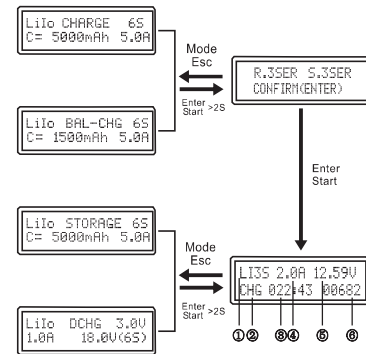
This screen shows the number of cells you set up and the processor detects."R"shows the number of cells found by charger and "S" is the number of cells selected by you at the previous menu. If both number are identical you can start chargingby press Enter/Start button.if not, press Mode/Esc button to go back to previous menu, then carefully check the number of cells of the battery pack to charge again. If you selected the AUTO mode or discharge mode, you can pass over this screen directly.

This screen shows the present situation during charge process. to stop charging press Mode/Esc key once; As you can see in the sketch on left, ①:for the cells count, ②:for the operating mode,CHG=charging at auto mode / BAL=balance charging mode / FAS =fast charging / STO=storage mode / DSC=discharge mode;③:elapsed time, ④:charge/discharge current,⑤:charge/discharge voltage of battery,⑥:capacity of charge/discharge

Data View

According to press $^{Dec./Inc.}$ key you can inquire the individual voltage of each batteries and final voltage etc. continually as follow (this need to connect the balance plug):

```
▶ Inc.>2S
3.81  3.79  3.85
3.78  3.80  3.85
```
You can enquire the unit voltage and total voltage before charge or discharge process.

Press ▶Inc. key for more than 2 seconds,then it will show you the unit voltage as left.

```
◀ Dec.>2S
INPUT = 12.60U
OUTPUT = 8.10U
```
Press ◀Dec. key for more than 2 seconds, then it will show you the input voltage and output voltage as left.

Attetion: You should enter into the Lithium battery charge/discharge mode first.

```
▶ Inc.
4.20  4.20  4.20
0.00  0.00  0.00
```
You can check the individual voltages of each cell in the battery pack while using the individual connection cable to the battery.

```
◀ Dec.
End  Voltage
     AUTO CHK
```
The final voltage will be reached at the end of process

```
◀ Dec.
Capacity Cut-off
ON    5000mAh
```
You can inquire the safety capacity

```
◀ Dec.
Safety  timer
ON    120min
```
You can inquire the safety time

```
◀ Dec.
EXT.Temp   0C
```
It shows you the external temperature when the temperature sersor is connected you can inqrire. You can enquire the inner/external temperature when temperature sensor is connected

```
◀ Dec.
IN Power VOLTAGE
       12.60U
```
This shows the present voltage of input power

NiMH/NiCd battery program

```
PROGRAM SELECT
NiMH Battery
```
Mode/Esc
Enter/Start

```
◀Dec.  NiMH CHARGE Man
CURRENT   1.0A
```
Dec. Inc.

```
NiMH CHARGE Aut
CUR LIMIT   1.0A
```
Dec. Inc.

```
NiMH DISCHARGE
1.0A    12.0U
```
Dec. Inc.

```
NiMH CYCLE C▷D
C=1.0A D=1.0A 1    ◀Inc.
```
Ⓐ Ⓑ Ⓒ Ⓓ

Ⓐ Charge current in the cycle mode
Ⓑ Discharge current in the cycle mode
Ⓒ Sequence fo cycle Ⓓ Number of cycle times

Press $^{Mode}_{Esc}$ key to the screen on the left,then press $^{Enter}_{Start}$ key to $^{Enter}_{Start}$ into the submenu. You can switched at the same level menu to select the mode by $^{Dec./Inc.}$Key. please refer the etailed flow chart on the left. When you are willing to alter the parameter value in the program, press$^{Enter}_{Start}$ key to make it blink, then change the value with $^{Dec./Inc.}$key. the value will be stored by pressing $^{Enter}_{Start}$ key once.then press $^{Enter}_{Start}$ key for more than 2 seconds to start the process.Since the menu of NiMH are the same as NiCd, there is an example of NiMH only.

"CHARGE" mode the default mode is "AUT" . In "AUT"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. But in "Man" mode, it will charge the battery with the charge current you set at the display. Each mode can be switched by pressing start/enter key, when the current field is blinking, press $^{Dec./Inc.}$ Key for more than 1 second.

"DISCHARGE"mode the discharge current ranges from 0.1A to 2.0A 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 of manufacturer.

"CYCLE" mode the charger perform 1-6 cycles of DCHG >CHG or CHG>DCHG continually.You can select it for the new NI** battery or the long-term placement NI** battery .please set up carefully,or it will damage the battery! To set the parameter please follow the previous charge/discharge menu

After check all the mode, to start the process press $^{Enter}_{Start}$ key for more than 2 seconds

```
NiMH CHARGE Aut
CUR LIMIT   1.0A
```
Mode/Esc

```
NiMH DISCHARGE
1.0A    12.0U
```
Enter Start

```
NiMH CYCLE C▷D
C=1.0A D=1.0A 1
```

```
NiMH 2.0A 7.42U
CHG 022 45 00890
```
Enter>2S

①② ③ ④⑤ ⑥

The screen displays the present state of process.To stop it press $^{Mode}_{Esc}$ key; Description: ①:the type of battery, ② : operating mode:CHG=charge/DSC =discharge/DCHG>CHGorCHG> DCHG=thecycle mode ③ :elapsed time , ④:charge/discharge current of the battery, ⑤:voltage of the battery pack, ⑥:capacity of charge/discharge You can inquire the temperature and △V continu lly by press $^{Dec./Inc.}$ key

Pb battery program

This is programmed for charging Pb battery with nominal voltage from 2 to 20V,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.

Charging Pb battery

```
Pb     CHARGE
4.0A   12.0U(6P)
```
Mode Enter>2S
Esc   Start

```
Pb-6 4.0A 12.59U
CHG 022.43 00682
```

As you can see on left,you can set up the charge current on the left .the nominal of the second line and voltage of the battery on the right of the second line .the charge current ranges from 0.1-7.0A and the voltage should be matched with the battery being charged. start the charge process by pressing $^{Enter}_{Start}$ key for more than 2 seconds.

The screen displays the state of charging process. to stop charging forcibly,press $^{Mode}_{Esc}$ key once.

Discharging Pb battery

```
Pb    DISCHARGE
4.0A   12.0U(6P)
```
Mode Enter>2S
Esc   Start

```
Pb-6 0.4A 12.59U
DSC 022 43 00682
```

Set discharge current on the left and final voltage on the right,the discharge current ranges from 0.1-2.0A and the voltage should be matched with the battery being discharged.start the discharge process by pressing $^{Enter}_{Start}$ key for more than 2 seconds.

The screen displays the current state of discharge.

Digital power program

```
PROGRAM SELECT
Digital Power
```
Mode   Enter
Esc   Start

```
POWER MODE
2.0A      12.0U
```
Mode   Enter>2S
Esc   Start

```
CURRENT   2.00A
VOLTAGE   12.0U
```

In this mode,charger can provide a output power of DC3.0V-24V for the other electronic equipment

Warning and Error Messages

The charger 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.

`REVERSE POLARITY` → The output is conne cted to a battery with incorrect polarity

`CONNECTION BREAK` → This will be displayed in case of detecting an interruption of the connection between battery and output or voluntarily disconnecting the charge lead during the operation of charge or discharge on output

`SHORT  ERROR` → There was a short-circuit at output.please check the charging leads.

`INPUT VOL ERR` → The voltage of input power drops below the limit.

`VOL SELECT ERR` → The voltage of Lithium battery pack was selected incorrectly.Verify the voltage of battery pack carefully

`BREAK DOWN` → There happens the malfunction at the charger circuit by any reason.

`BATTERY  CHECK LOW VOLTAGE` → The processor detects the voltage is lower than you set at Lithium program.please check the cell count of the battery pack.

`BATTERY  CHECK HIGH VOLTAGE` → The processor detects the voltage is higher than youset at Lithium program.please check the cell count of the battery pack.

`BATTERY VOLTAGE CELL LOW VOL` → The voltage of one of the cell in the Lithium battery pack is too low.please check the voltage of the cell one by one.

`BATTERY VOLTAGE CELL HIGH VOL` → The voltage of one of the cell in the Lithium battery pack is too high.please check the voltage of the cell one by one.

`BATTERY VOL ERR CELL CONNECT` → There are bad connection at the individual connector.please check the connector and cables carefully

`TEMP OVER ERR` → The internal temperature of the unit goes too high. cool down the unit.

`CONTROL  FAILURE` → The processor can not continue to control the feeding current by any reason.The unit needs to be repaired.

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 andinterests .

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'sinternal. 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 bear the maintenance and transport costs.

COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

Declaration of Conformity

CE

Product(s):   AC/DC Multi charger
Item Numer(s):   Q6320AC

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
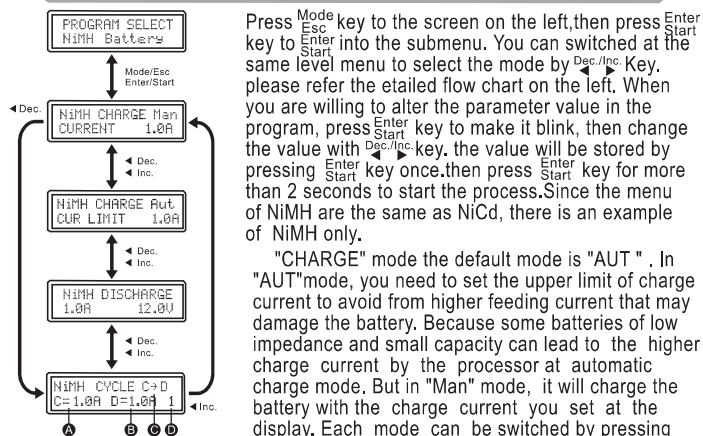EN61000-3-2:2006
EN61000-3-3:2008

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.