CHARGERY

5006B 5008B 50010B

for up to 10S LiPo & LiFe

5mV voltage accuracy
500W charge power
1.3A balance current
2.8" TFT LCD display

Thanks for your purchasing the 500W CHARGER for your RC.

Read the ENTIRE instruction manual to become familiar with the features/functions of the device before operating.

Feel free to send an email to jasonwang3a@163.com or call at 86 755 2643 6165 should you have any questions and suggestions.

Jason Wang

Chargery 5006B,5008B,50010B Series charger uses advanced Synchronous buck-boost DC/DC converter technology, high power, high current and high-performance power conversion circuit. The maximum charge power up to 500W, the maximum charge/discharge current is up to 20A. The charger can charge up to 10S LiPo, Lilo, LiFe, with maximum 1.3A balance current, adopts unique balance circuit resume fast all cells voltage.

Safety Notes

Please read the manual completely before using, to make sure you can use this device better and more safely.

1. Keep the charger away from children and pets at all times.
2. Never leave the charger unsupervised when charging or discharging. If you leave, disconnect the battery to prevent any unexpected dangers or damage.
3. Ensure the charger program and settings match the battery pack otherwise the battery will be damaged and a dangerous situation may arise, especially for Lithium batteries which may cause a fire.
4. Do not mix batteries of different types, different capacities or from different manufacturers.
5. Never charge or discharge any battery having evidence of leaking, expansion/swelling, damaged outer cover or case, color-change or distortion.
6. Do not place the charger or any battery on a flammable surface or near a combustible material while in use. Do not charge or discharge on a carpet, cluttered workbench, paper, plastic, vinyl, leather or wood, inside an R/C model or inside a full-sized automobile.
7. Do not try to charge "non-rechargeable" dry cells.
8. Never block the air intake holes and Don't use the charger in a refrigerated or high temperature environment.
9. Do not allow water, moisture, metal wires or other conductive material into the charger.
10. Do not exceed the battery manufacturer's suggested maximum charge and discharge rates.
11. Carefully follow the battery pack manufacturer's recommendations and safety advice.

Copyright

Special Features

1. Unique charge architecture make the charger response quickly to any changes of voltage on input and output.
2. The charger use advanced ADC measurement technology, high accuracy, high voltage and high current detection circuit. The maximum voltage measurements tolerance is within 5mV at up to 10S LiPo battery.
3. The charger adopts advance balance circuit and Algorithm, constant 1.3A per cell balance current is very useful for large capacity battery pack, the feature can resume all cell voltage balance status at the shortest time. Over temperature protection make sure the system safety during balance.
4. Charger internal temperature protection. When the internal temperature exceeds the reduce temperature, the output power is automatically decreased; and the charger will stop working when temperature exceeds the shut-down temperature.
5. Intelligent fan control circuit sense internal temperature via temperature sensor, to thereby control the fan speed.
6. TFT LCD screen provides rich information including current, voltage, power, capacity, time, working status and temperature and so on.
7. The charger features a maximal safety protection,
   - Reversed polarity protection on input and output,
   - Anti-spark on input and output
   - Wrong battery pack connection protection when multi battery pack connected in series on adapter board.
   - Charge time, charge capacity and battery temperature protection
8. Supports upgrading the firmware program by USB port.

Specifications

1. Input voltage: DC 10-28V, 30V max.
2. Input Current: 25A maximal
3. Charge current: 0.1-20A, 500W max.
4. Discharge Current: 0.1-10A, 35W max.
5. Accuracy of the cell voltage: -5mV/+5mV
6. Balance current: 1.3A per cell only for LiPoly, Li-ion and LiFePO4 battery pack
7. Battery Type: LiPoly, Li-ion, LiFePO4, NiMh/NiCd, Pb acid(VRLA) battery pack

	5006B	**5008B**	**50010B**
Li-ion battery	1-6S	1-8S	1-10S
LiPoly battery[1)]	1-6S	1-8S	1-10S
LiFePO4 battery	1-6S	1-8S	1-10S
NiMH/NiCd battery[2)]	1-20S	1-24S	1-30S
Pb battery	1-12S (24V)	1-12S (24V)	1-18S (48V)

1) The terminal voltage per cell can be set up to 4.35V only for **HV LiPo battery**.
2) NiMh/NiCd cell count is identified automatically

Mechanical Characteristics

- Size：154*114*33 (L×W×H, mm) or 6.1×4.48×1.3 (L×W×H, inch)
- Weight: 680g
- Input power cable: AWG14 wire, 600mm length

Packaging Content

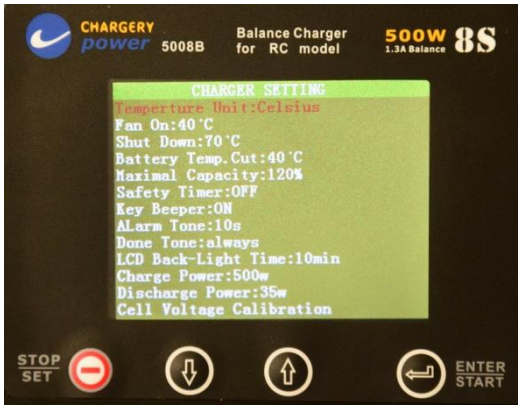
- Charger unit: 1pcs
- Power cable: 1pcs, AWG14 wire, 320mm length with 4mm gold male connector
- USB data line: 1pcs
- Temperature sense lead: 1pcs
- adapter wire: 1pcs, connect charger to adapter board
- adapter board:1pcs

Interface

DC Input	Input power supply or battery, DC voltage range is 10V to 28V, absolutely 30V maximal
USB port	Connect to PC update the firmware by Chargery UpdateTool.
Output port	Connect to battery discharge or charge.
Temperature sensor port	Connect to temperature sensor monitor battery temperature, the sensor must be pasted tightly battery during charge or discharge. battery temperature can affect battery life and performance seriously, the maximal temperature should not be over 40 ℃ during charge.
Balance port	Connect to adapter board or battery directly for Balance charge or Balance only.
STOP/SET	When the charger operate any program, Press STOP button terminate it. In main interface, and no any program operate, Press for 2 seconds get the cell and battery impedance.
DOWN	Decrease parameter value or alternate menu item
UP	Increase parameter value or alternate menu item
ENTER/START	In main interface, press for 3 seconds, the unit will enter into function interface directly, press for 3 seconds will operate last program directly. In Battery Type interface, press for 3 seconds, the unit will enter into charger setting menu. In Memory Select interface, press for 3 seconds, the unit can edit memory name In function interface, press for 3 seconds, the unit will operate chosen program.

Program Setting

1. In Battery Type interface, Press ENTER/START button for 3 seconds enter into CHARGER SETTING interface.
2. Press UP or DOWN button select the item, press STOP/SET shortly make the value flash, and press UP or DOWN change the value. Press STOP/SET button shortly confirm the change. After finish all setup, press STOP/SET for 3 seconds quit the setup menu.
3. When quit setup mode, The charger will save all parameters till next change.



NOTE: Please keep the default setup unless for special purpose.

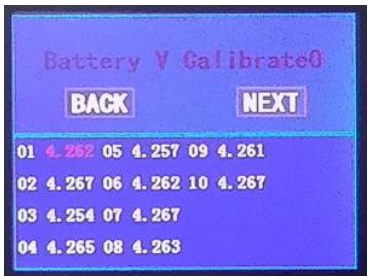
Parameters	Min.	Default	Max.	Step	unit
Temperature Unit		Celsius	Fahrenheit		
Fan ON, Fan start temperature	35	40	50	1	℃
Shut Down, the charger stop working when internal heat sink temperature reach the value	50	70	70	1	℃
Battery Temp. Cut	25	40	80	1	℃
Maximal Capacity, maximal charged capacity	10	120	200	1	%
Safety Timer, maximal charged time(1)	1	120	9999	1	min
Key Beeper		ON	OFF		
Alarm Tone	5	10	20	1	second
Done Tone(2)					
LCD Back-Light Time(3)	1	10	255	1	min
Charge power	10	500	500	1	W
Discharge power	5	35	35	1	W
Cell Voltage Calibration(4)					

NOTES:

1) if alternate choose OFF, the safety timer will be inactive.
2) Done tone sound have 4 mode: 30seconds, 3 min, 5times and always. press ENTER/START or STOP/SET turn off the sound.
3) Always will make the LCD Back-Light is ON till power off the charger
4) **Cell Voltage Calibration** is not recommended, all voltage and current is calibrated before delivery.

when need calibrate cell voltage, In Battery Type interface,please press ENTER/START Button for 3 seconds enter into CHARGER SETTING interface, press DOWN button select Cell Voltage Calibration and press ENTER/START button shortly enter into calibration interface as following picture.

a) Choose Cell Voltage Calibration and press ENTER/START button shortly, you will find cells voltage, press ENTER/START and UP/DOWN modify voltage according to standard voltage, choose NEXT and press ENTER/START button for 3 seconds save.

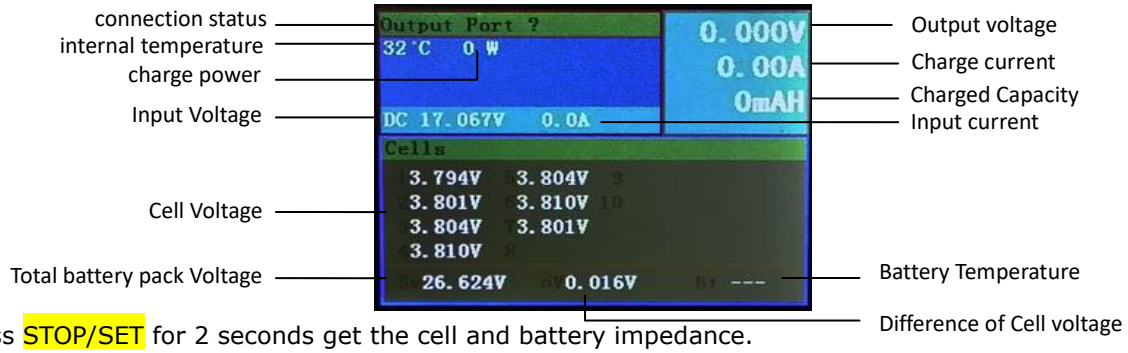


b) Choose Default Cell Voltage and press ENTER/START shortly resume all cell voltage to default value.

c) Press ENTER/START for 3 seconds return previous interface.

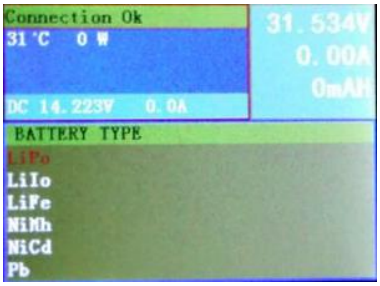
Operating guideline

1. Connect the charger to power supply or battery pack with 10-28V, the unit will start and display Chargery logo, model, version and series number, 2 seconds later, main interface is displayed. as following picture.

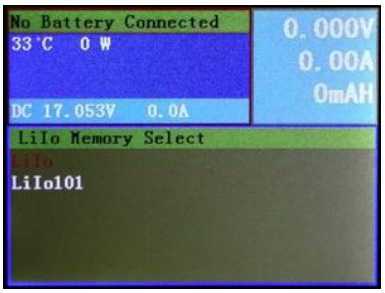


2. Press STOP/SET for 2 seconds get the cell and battery impedance.
3. Connect to battery on Balance port.

Warning: for 2 or 3 batteries connected in series, please check the details on page 11 before next step operation, wrong connection will burn adapter board even short circuit the battery.



4. Connect battery positive to charger output
5. Connect battery negative to charger output.
6. Press ENTER/START shortly enter into battery type as right picture, Press UP/DOWN alternate battery type. Press STOP/SET return last interface.
7. Press ENTER/START shortly on any battery type display Memory Selection interface. as below right picture. Press STOP/SET return last interface.



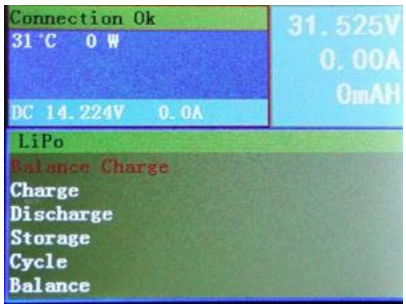
8. Press ENTER/START shortly on any memory name enter into function selection interface. take Li-Ion battery as sample. each battery memory record all parameters include cell count, charge current, end voltage and so on, the charger is built in one memory including a set of default value before delivery, the default memory name is LiIo, LiPo, LiFe, NiMH, NiCd or Pb.

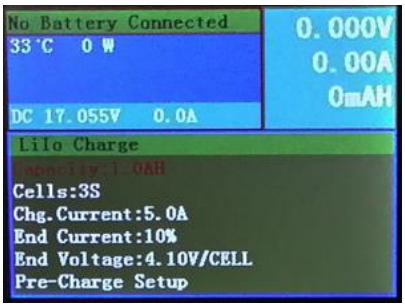
Press ENTER/START button for 3 seconds Edit, Add or Delete recorded memory data as right picture. one memory data has a memory name and include a set of charge and discharge parameters, you can save a set of parameters for your each battery, the charger can save up to 10 set of parameters for each battery type.

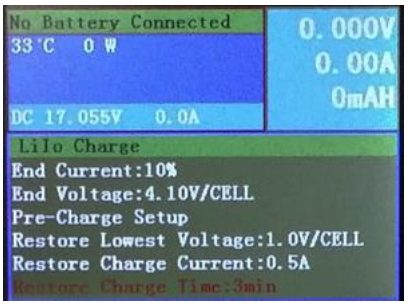
Press UP/DOWN alternate Edit, Add or Delete, Press Edit and UP/DOWN modify saved memory name. Press Delete delete saved memory data. Press Add save new data.

if need add new data record, first press Add and press UP/DOWN rename a memory name (press STOP/SET back to last name), then press Save and save it. after you choose new memory name and modify some parameters, the charger will record the latest parameters. Press Exit don't save any change. see right picture.

9. Press ENTER/START shortly on any function, the function parameters setup interface will be displayed, Press ENTER/STAR choose item and press UP or DOWN modify. for Li-ion, LiPo and LiFePO4 battery, there are Charge, Balance Charge, Discharge, Storage, Cycle and Balance functions. Take as Li-ion Charge as sample. The details are as below pictures.







The details of parameters set up for **Li-Ion, LiPo and LiFe** battery is in the following table.

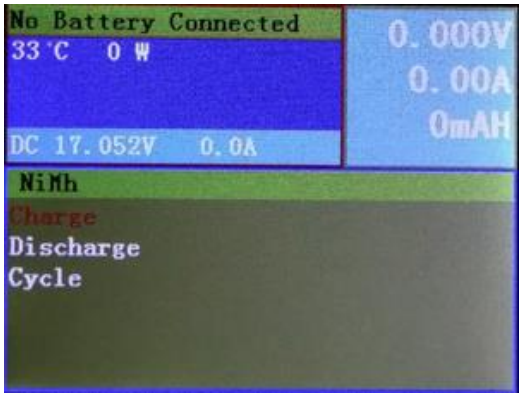
Parameters		Min.	Default	Max.	Step	unit
Charge						
Capacity---Rated battery capacity[1)]		0.1	3	100	0.1	Ah
Cells-----cell count[2)]	5006B	1	3	6	1	
	5008B	1	3	8	1	
	50010B	1	3	10	1	
Chg. Current----Charge current		0.1	5	20	0.1	A
End Current----Charge terminal current		5	10	20	1	%
End Voltage----Charge terminal voltage per cell	Li-Ion	3.85	4.10	4.35	0.01	V
	LiPo	3.85	4.20	4.35	0.01	V
	LiFe	3.20	3.65	3.65	0.01	V
Pre-charge Setup						
Restore Lowest Voltage per cell----any cell voltage cannot be charged to over setup, the charge will stop		0.5	1.0	2.5	0.1	V
Restore Charge Current		0.1	0.5	1	0.1	A
Restore Charge Time		1	3	5	1	min
Balance charge						
Balance Start---any cell voltage reach the value, balance function will start[3)]		CV-0.0	CV-0.2	CV-1.0	0.1	V
Balance Diff--- balance stop when difference of cell voltage less than or equal to the value		3	5	10	1	mV
Discharge						
Dchg. Current---discharge current		0.1	2.0	10	0.1	A
End Current---Discharge terminal current		1	50	100	1	%
End Voltage--- Discharge terminal voltage per cell	Li-Ion	2.75	2.75	4.1	0.01	V
	LiPo	2.75	3.00	4.1	0.01	V
	LiFe	2.50	2.50	3.40	0.01	V
Storage						
Sto. Voltage---Storage voltage per cell	Li-Ion	3.65	3.75	3.90	0.01	V
	LiPo	3.65	3.85	3.90	0.01	V
	LiFe	3.10	3.20	3.30	0.01	V
Cycle						
Cycle Mode		CHG--->DCHG		DCHG--->CHG		
Cycle Count		1	3	99	1	
Delay Time---the time between charge and discharge		0	3	999	1	min
Balance						
Balance Diff.		3	5	10	1	mV

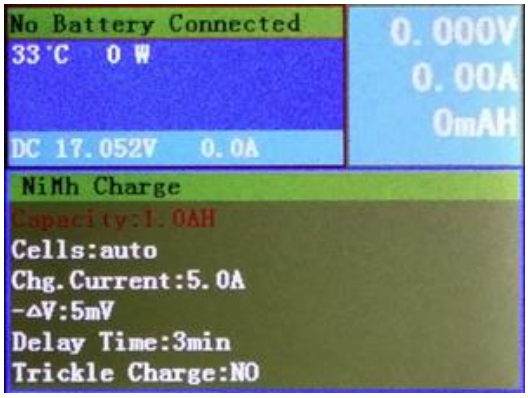
1) **Ignore** means the charged capacity cannot be as control condition.

2) **Auto** means the charger will identify cell count automatically

3) **Always** means the charger start to balance when start to charge. CV is charge terminal voltage per cell.

For **NiMh/NiCd** battery, there are Charge, Discharge and Cycle functions. as below pictures.

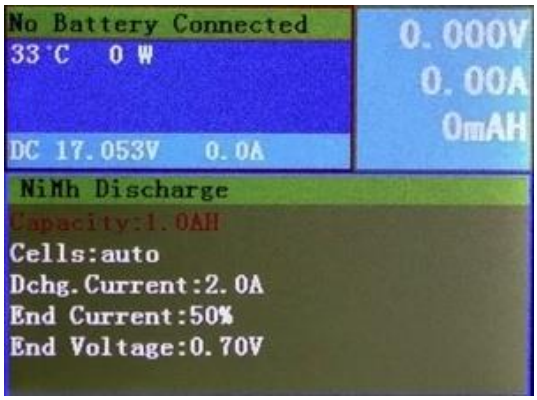


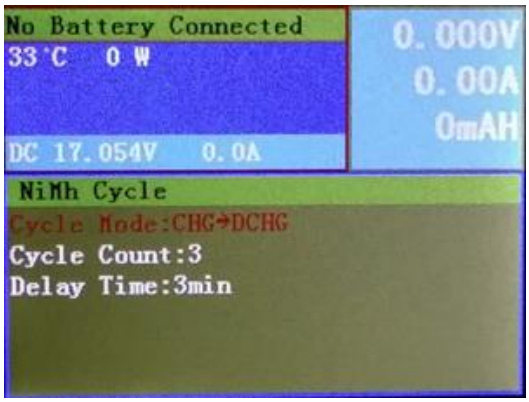


The Details of parameters set up for **NiMH/NiCd** battery is in the following table.

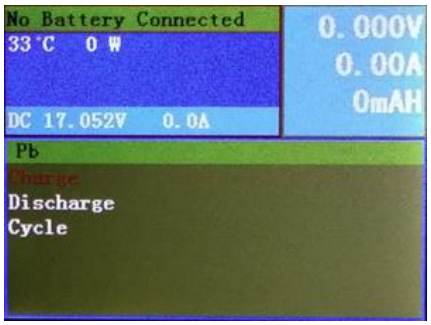
Parameters		Min.	Default	Max.	Step	unit
Charge						
Capacity---Rated battery capacity[1)]		0.1	3	100	0.1	Ah
Cells-----cell count	5006B		Auto			
	5008B		Auto			
	50010B		Auto			
Chg. Current----Charge current		0.1	5	20	0.1	A
-ΔV		5	5	20	1	mV
Delay Time---Battery Voltage restore time		0	3	20	1	min
Trickle Charge			NO	YES		
Trickle Current		0.1	0.5	1	0.1	A
Trickle Time		1	5	999		min
Charge Mode			Normal			
Discharge						
Dchg. Current---discharge current		0.1	2.0	10	0.1	A
End Current---Discharge terminal current		1	50	100	1	%
End Voltage--- Discharge terminal voltage	5006B	0.7	0.7	20	0.01	V
	5008B	0.7	0.7	24	0.01	V
	50010B	0.7	0.7	30	0.01	V
Cycle						
Cycle Mode		CHG--->DCHG		DCHG--->CHG		
Cycle Count		1	3	99	1	
Delay Time---the time between charge and discharge		0	3	999	1	min

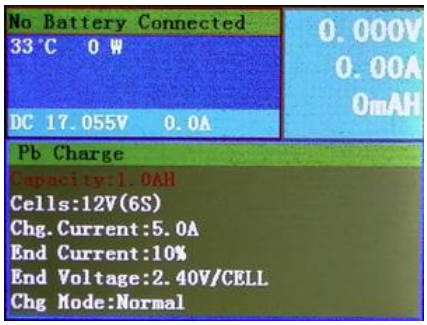
1) **Ignore** means the charged capacity cannot be as control condition.

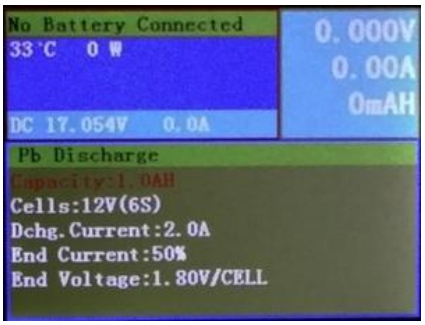




For **Pb acid battery (VRLA)**battery, there are Charge, Discharge and Cycle functions. as below pictures.







The details of parameters set up for **Pb acid battery (VRLA)** is in the following table.

Parameters		Min.	Default	Max.	Step	unit
Charge						
Capacity---Rated battery capacity[1)]		0.1	3	100	0.1	Ah
Cells-----cell count	5006B	1	6S(12V)	12		
	5008B	1	6S(12V)	12		
	50010B	1	6S(12V)	18		
Chg. Current----Charge current		0.1	5	20	0.1	A
End Current----Charge terminal current		1	10	50	1	%
End Voltage----Charge terminal voltage per cell		2.00	2.40	2.50	0.01	V
Charge Mode			Normal			
Pre-charge Setup						
Restore Lowest Voltage per cell----any cell voltage cannot be charged to over setup, the charge will stop		0.5	1.0	2.5	0.1	V
Restore Charge Current		0.1	0.5	1	0.1	A
Restore Charge Time		1	3	5	1	min
Discharge						
Dchg. Current---discharge current		0.1	2.0	10	0.1	A
End Current---Discharge terminal current		1	50	100	1	%
End Voltage--- Discharge terminal voltage per cell		1.50	1.80	2.40	0.01	V
Cycle						
Cycle Mode		CHG--->DCHG		DCHG--->CHG		
Cycle Count		1	3	99	1	
Delay Time---the time between charge and discharge		0	3	999	1	min

1) **Ignore** means the charged capacity cannot be as control condition.

10. Finish all parameters setup, press ENTER/START for 3 seconds, pop up a window, press YES start to operate program.
11. Press ENTER/START shortly stop any program and return last interface. Press STOP/SET also stop any program but return to main interface (first interface after power on the charger).

Error or Warning

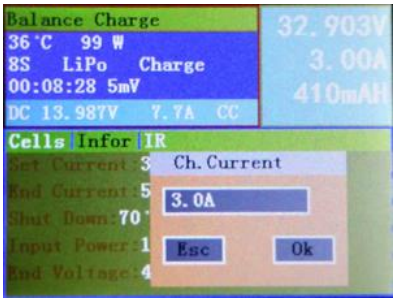
When any mistakes triggered, the charger will stop working, and display error information, press ENTER/START return main interface.

Such as if the battery connection bread down, the battery connection error will be displayed on the top line. if the battery temperature over the setup value, "Over Temperature" will be displayed, as so on.

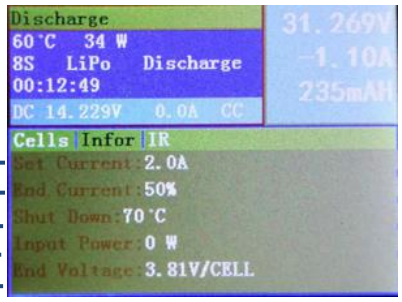
Tips

1. **In main interface, press for 3 seconds, the charger will enter into function interface directly, press for 3 seconds will operate last program directly.**

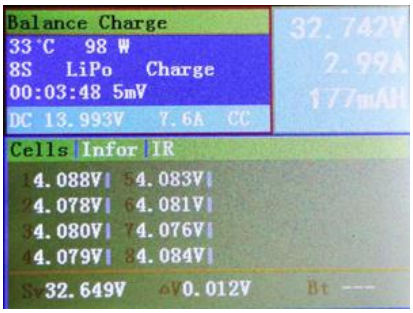
2. During charge in CC phase, the charge current can be set up to new value and need not stop charging. On Cells and Infor page, press ENTER/START button for 3 seconds, Ch. Current modification window is pop up, please press ENTER/START and UP or DOWN button modify charge current, press **Esc** quit and press **Ok** save the change. The charger will charge at new current.

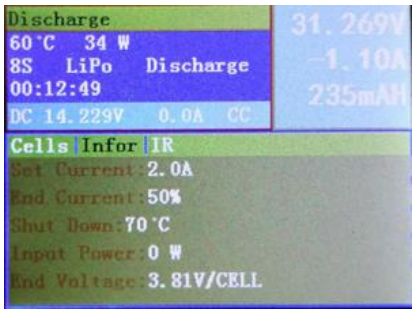


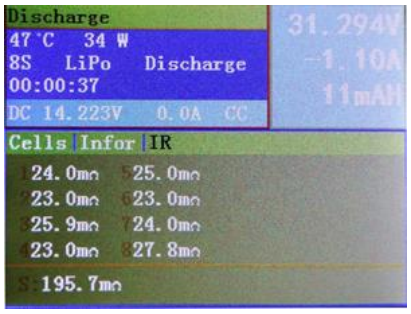
And Press UP or Down to alternate Cells, Infor and IR label page, on Infor page, you will check some preset parameters and actual input power. On IR page, you can check each cell impedance and total battery impedance



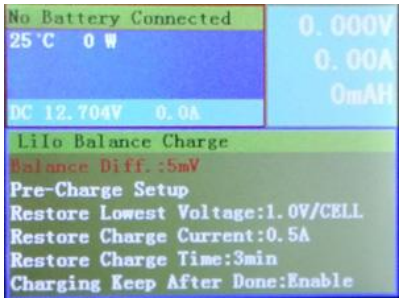
3. During discharge, the discharge terminal voltage can be changed and need not stop discharging, On Cells and Infor page, press ENTER/START button for 3 seconds, Disch. End.Voltage modification window is pop up, please press ENTER/START and UP or DOWN button modify end voltage per cell, press Esc quit and press Ok save the change. The charger will continue to discharge and stop at new terminal voltage.







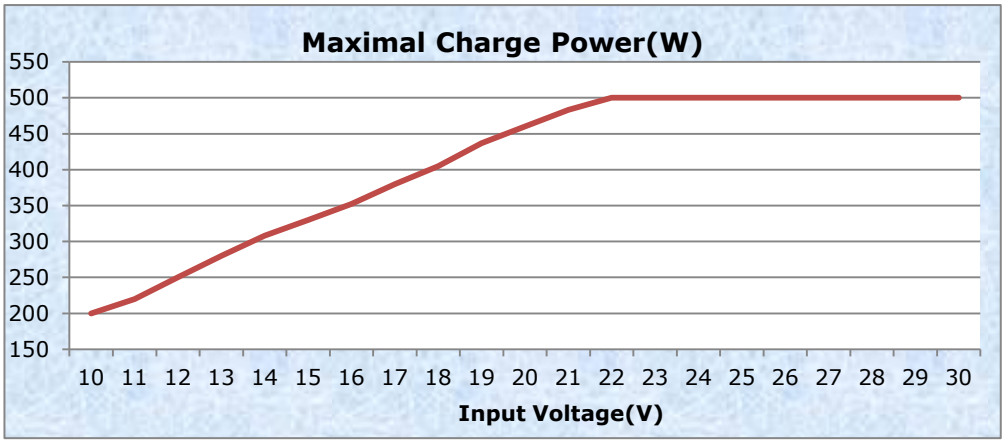
4. On LiIon, LiPo and LiFe battery balance charge program, Enable "Charging Keep After Done", continue to charge at smaller current when charging is done. Disable the function, will stop really charging.



Firmware Upgrades via USB Port

1. Go to http://www.chargery.com/uploadFiles/ChargeryupdateTool.zip to download the ChargeryupdateTool.zip, the zip file include Chargery USB driver, and Chargery Update Tool, extract to any disk on the PC.
2. To install the USB driver, run the program X:\ChargeryupdateTool\ChargeryUSBdriver.exe (where X is the drive letter designator for your CD-ROM drive.)
3. In the same directory, double click to run the update tool and enter program interface.
4. Connect the charger to the PC by the USB data cable. When the port number (such as com5) appears, this shows the update tool identified the charge. Click OPEN button lock the port please.
5. Click Open file button open the firmware file. If there is no firmware file on the PC, you can download the file on http://www.chargery.com/uploadFiles/firmwareFiles/ to your PC.
6. Click the Update button, then the update progress bar will appear on the bottom, update complete will be displayed on PC. The charger display the progress bar simultaneously and restart the charger after finish update.

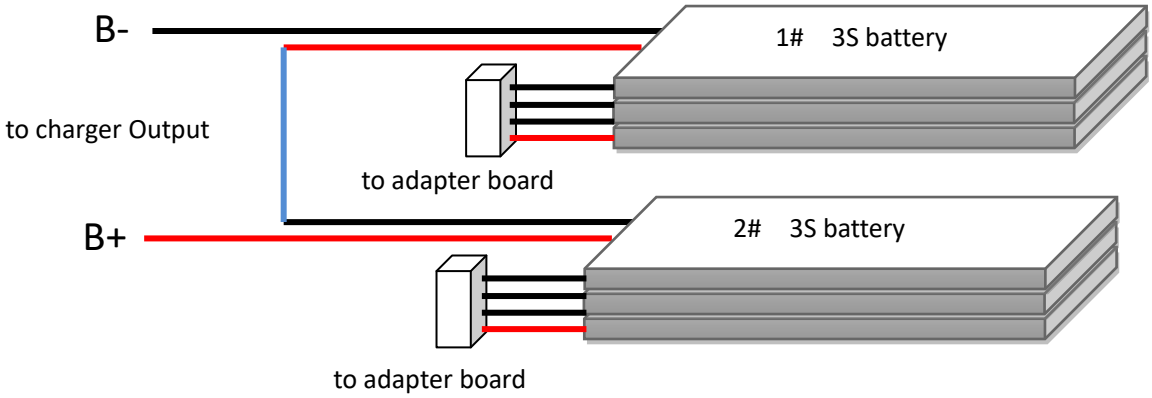
Maximal Charge Power VS Input Voltage



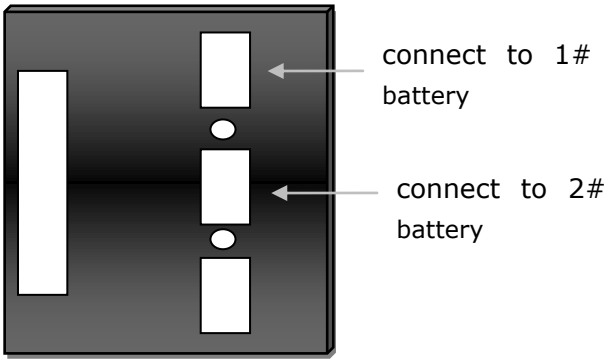
Typical Connection

Each charger fit with one adapter board, one battery pack can plug in to a correct socket, 2 or 3 battery packs must be connected in series on the board, such as two 3S packs will be charged as one 6S pack.

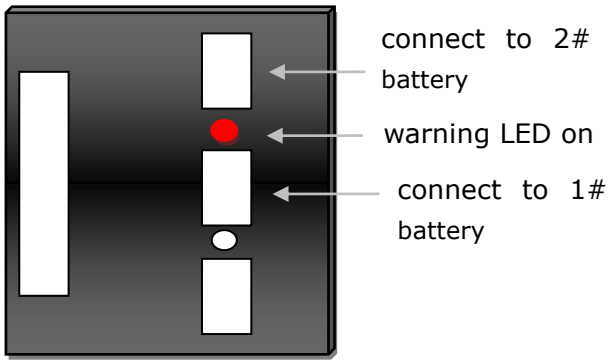
1. Connect two or three packs with heavy wire (as same as the Blue wire in following picture). Take two 3S battery as sample.



2. Plug 1# battery and 2# battery into adapter board, if plug into mistaken socket, the red LED will be on, please do it again.

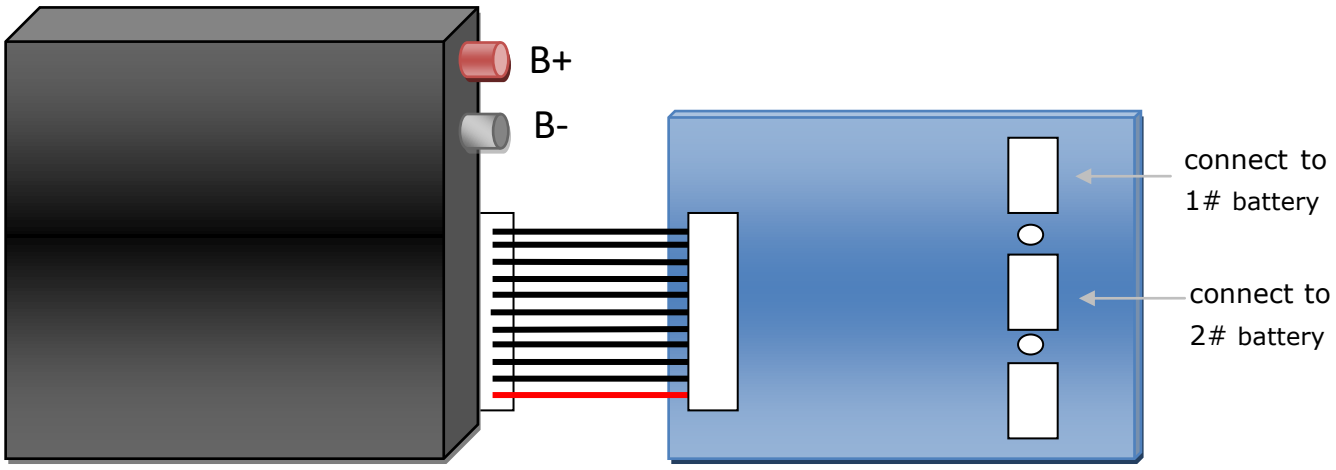


Correct connection

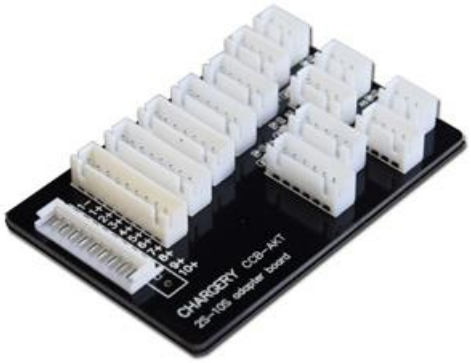


Wrong connection

3. Connect adapter wire to charger balance port, then connect total battery pack positive to charger output port B+, and finally connect battery negative to output port B-



Accessory

USB data line	Output wire, 320mm
	
Adapter wire: connect adapter board to 5008B	**Adapter wire:** connect adapter board to 50010B
	
Adapter board for 5008B	**Adapter board for 50010B**
	
Temperature sensor	
	

Related parts

The following device is related with 500W CHARGER

MODEL	DESCRIPTION	COMMENTS
5006B	1-6S Li-Ion/LiPo/LiFe battery, 1.3A balance current	
5008B	1-8S Li-Ion/LiPo/LiFe battery, 1.3A balance current	
50010B	1-10S Li-Ion/LiPo/LiFe battery, 1.3A balance current	
S600plus	600W power supply specially for 500W charger	DC5-26V, 25A 600W output

Version History

Version	description
V1.03	First released
V1.06	• Add IR detection, • Optimize menu and simplify operation, • Adjust LCD contrast

Warranty and Service

Chargery Power Co., Ltd. as manufacture of 500W CHARGER to be free of defects in material and workmanship. This warranty is effective for 12 months from date of purchase. If within the warranty period the customer is not satisfied with the products performance resulting from a manufacturing defect, the accessory will be replaced or repaired.

Your selling dealer is your first point of contact for warranty issues. Return postage costs are the responsibility of the user in all cases. Please submit copy of original receipt with the return.

Damage due to physical shock (dropping on the floor, etc.), inappropriate power supply (unstable output voltage and insufficient power, etc.), water, moisture, and humidity are specifically NOT covered by warranty.

CHARGERY power
Charging Expert

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