Operating Instructions

CHARGERY 650B V1.5

Microprocessor controlled high performance Charger / Discharger/ Balancer / Cell Monitor for 1-6 LiPo & LiFe cells, 1-15NIMN/NICD cells and 2-20V Pb battery for LiPo & LiFe battery packs.

Charge Rate 0.1-5.0A, 50W. Discharge rate: 300mA 15W

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Welcome to CHARGERY CY-650B intelligent balance charger designed especially for 1 to 6 LiPo & LiFe cells, 1-15 NiMh/NiCd cells and 2-20V lead acid battery. Please read the following instructions carefully before using the charger.

Special Features

- **Built-in cell balancer for LiPo and LiFe cells**
  The CY-650B has a built-in individual cell balancer. LiPo or LiFe batteries are automatically balanced during charge. When the battery is fully charged, it will be also properly balanced.

- **High power and high performance circuit**
  CY-650B employs the high efficiency circuit. Therefore it can charge 6S LiPo/LiFe cells at maximal current of 5.0A, and the case is only 125*70*25mm. It is easy to take and convenient to use.

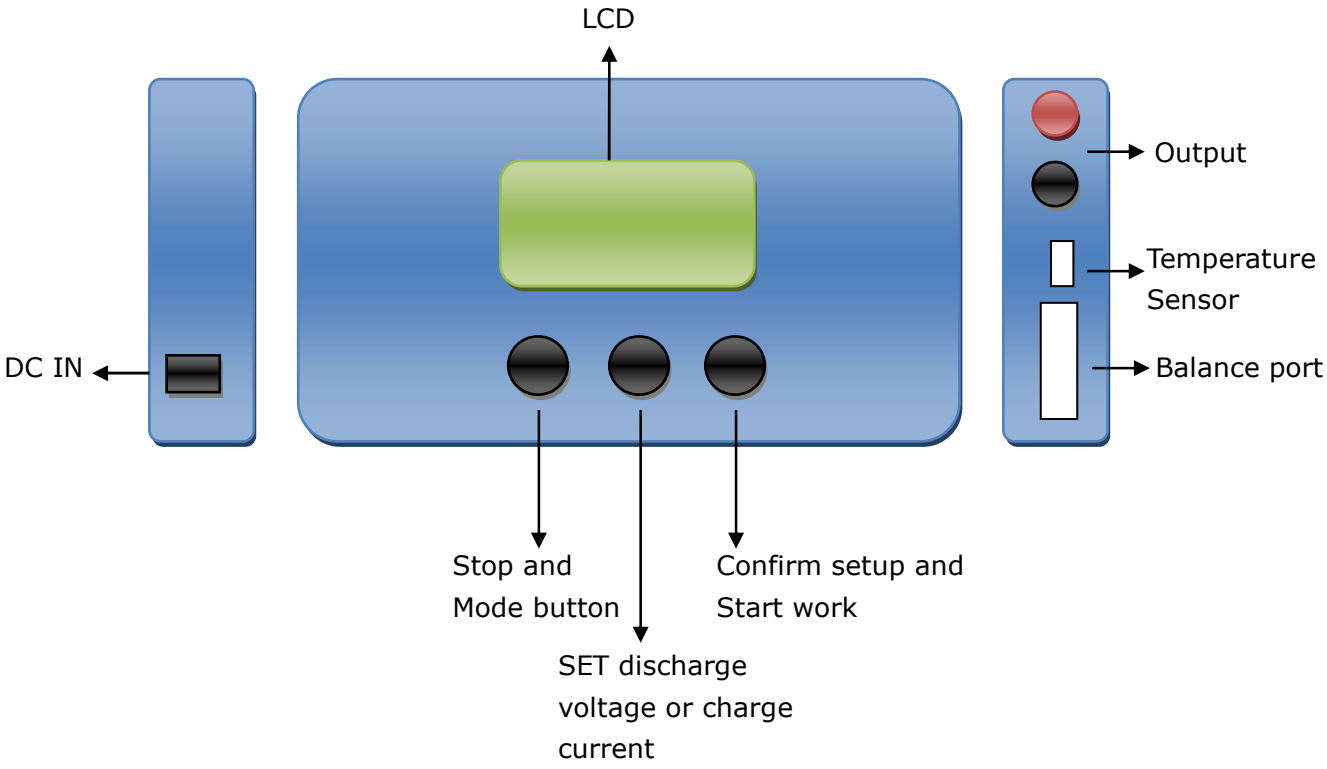
- **Balance cell voltage while discharge—balance Discharge**
  CY-650B can balance LiPo and LiFe cells in battery pack while discharge, at the same time adjustable terminal cell voltage is more convenient for special application.

- Input power monitor
  To protect the car battery using as input power from being damaged, the input voltage will be always monitored. If it is under 10.0V, the charging process will be stopped automatically.
  At the same time, when you use the AC adaptor or transformer as input power, if the input voltage over 15V, the charging process will be terminated to protect the CY-650B from being damaged.
- Reverse polarity and short circuit protection (input and output)
- Over charge and Over current protection
- Over temperature protection
- Light and attractive AL alloy case
- LCD with back-light displaying total battery pack voltage, cell voltage, difference of cell voltage, running time, charge current and so on.

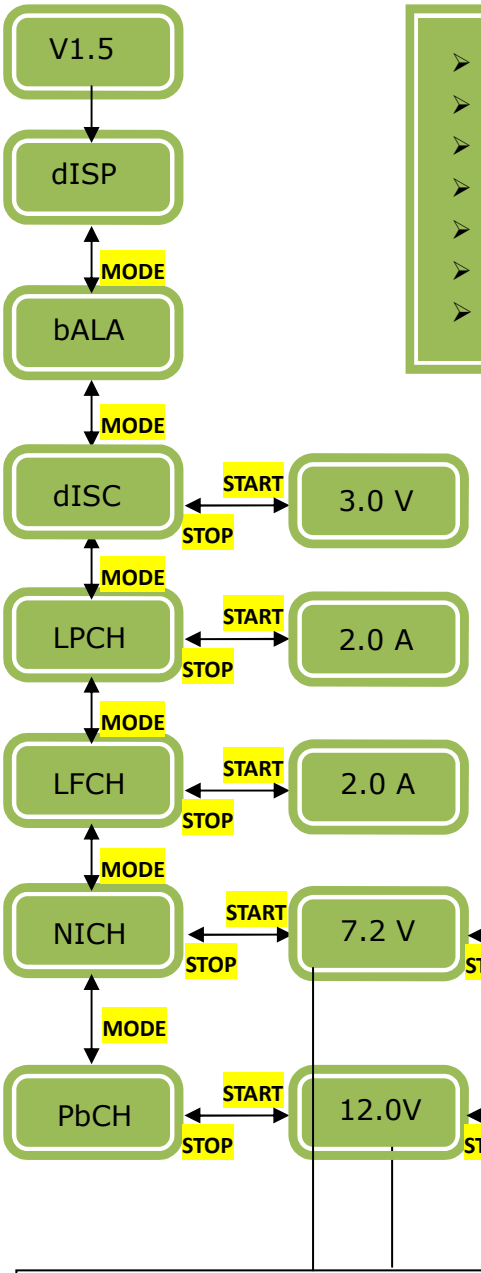
Specifications

- Applied battery type: 1~6 LiPo & LiFe cells, 1~15 NiMh/NiCd cells and 2~20V lead acid battery
- Input voltage: DC 10-18V, 6.0A
- Charge current: 0.1~5.0A, 50W max.
- Discharge current: 300mA 15W max.
- Balancing current: 300mA max.
- Balance precision:<10mV
- Display resolution:0.001V
- Detect precision:0.005V
- Dimension:125*70*25mm
- Weight:240g

Charger interface



Program flow chart



- **dISP**: cell monitor mode for LiPo and LiFe battery;
- **bALA**: balance mode for LiPo and LiFe battery;
- **dISC**: discharge mode for LiPo and LiFe battery;
- **LPCH**: balance charge mode for LiPo battery
- **LFCH**: balance charge mode for LiFe battery.
- **NICH:** NiMh/NiCd Charge mode
- **PbCH:** Pb Charge mode.

Press SET button set up the cell terminal voltage when discharge, range from 2.0~4.2V, default: 3.0V.

Press SET button set up the charge current, range from 0.1~5.0A, default: 2.0A.

Press SET buttons set up the charge current, range from 0.1~5.0A Default: 2.0A. Press START button start to charge. Press STOP return to main menu.

Press SET buttons set up the cell number, 1.2V (1S) to 18.0V(15S) for NiMh/NiCd battery, and 2V to 20V for Pb Battery.

Before any operating, press STOP button for 3 seconds and then press SET button set up the cut-off temperature, range from 20-70℃, default:40℃. Press ENTER confirm and press STOP cancel the change.

While operating, Press ENTER check the battery temperature and press again return.

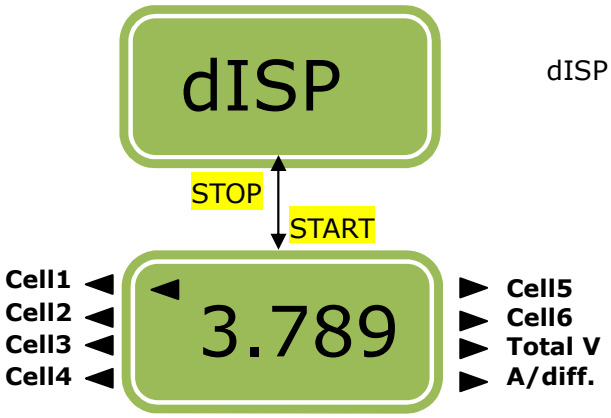
Note:

When you turn off the charger, it will remember the current setup and recall it when next turned on again.

Detect and display LiPo/LiFe battery at DISP mode

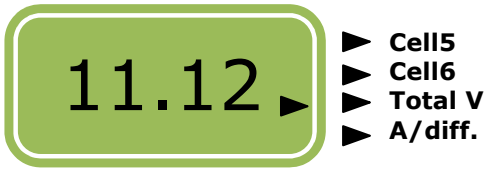
At dISP mode, press START button, 650B will detect and display LiPo/LiFe cell status, including cell voltage, total pack voltage, difference of voltage, battery gauge.

Press SET button stop displaying, and press again continue.
Press STOP button stop detecting and return main menu.



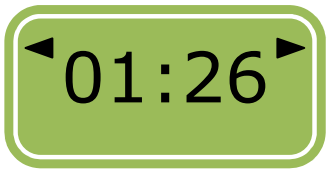
dISP means cell monitor mode.

First cell voltage is display on the left LCD.
◄ and ►
indicates the cell number from cell1 to cell 6.



The left LCD display the battery total voltage of 11.12V.

The left LCD display the difference of voltage of 0.023V.
In charge mode, the ► indicate charge current.



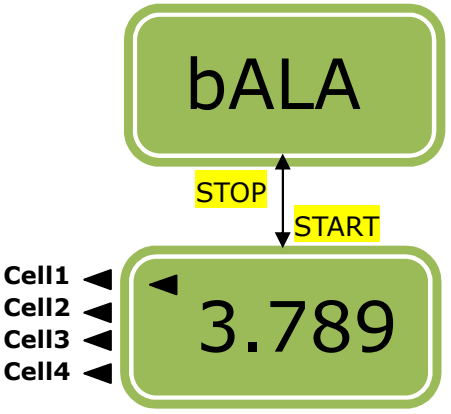
The left LCD display the displaying time. The format is HH:MM. "**:**" flash once time every second.
On the first line, ◄and► display at the same time.

The left LCD display the current working mode.
On the second line,◄ and ► display simultaneously.

Balance LiPo/LiFe battery at bALA mode

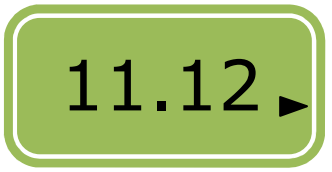
At bALA mode, press START button, 650B will work as a smart balancer, the high voltage cell will be discharged till the difference of cell voltage less than 10mV. The LCD will display cell voltage, total voltage, difference of cell voltage and running time, finally the battery will be balanced. It is only for LiPo and LiFe cells.

Press SET button stop displaying, and press again continue.
Press STOP button stop balancing and return main menu.



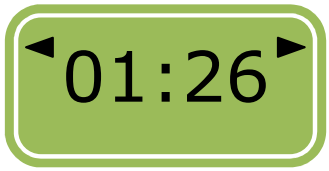
bALA means balance mode.

First cell voltage is display on the left LCD.
◄ and ►
indicate the cell number from cell 1 to cell 6.



The left LCD display the battery total voltage of 11.12V.

The left LCD display the difference of voltage of 0.023V.
In charge mode, the ► indicate charge current.



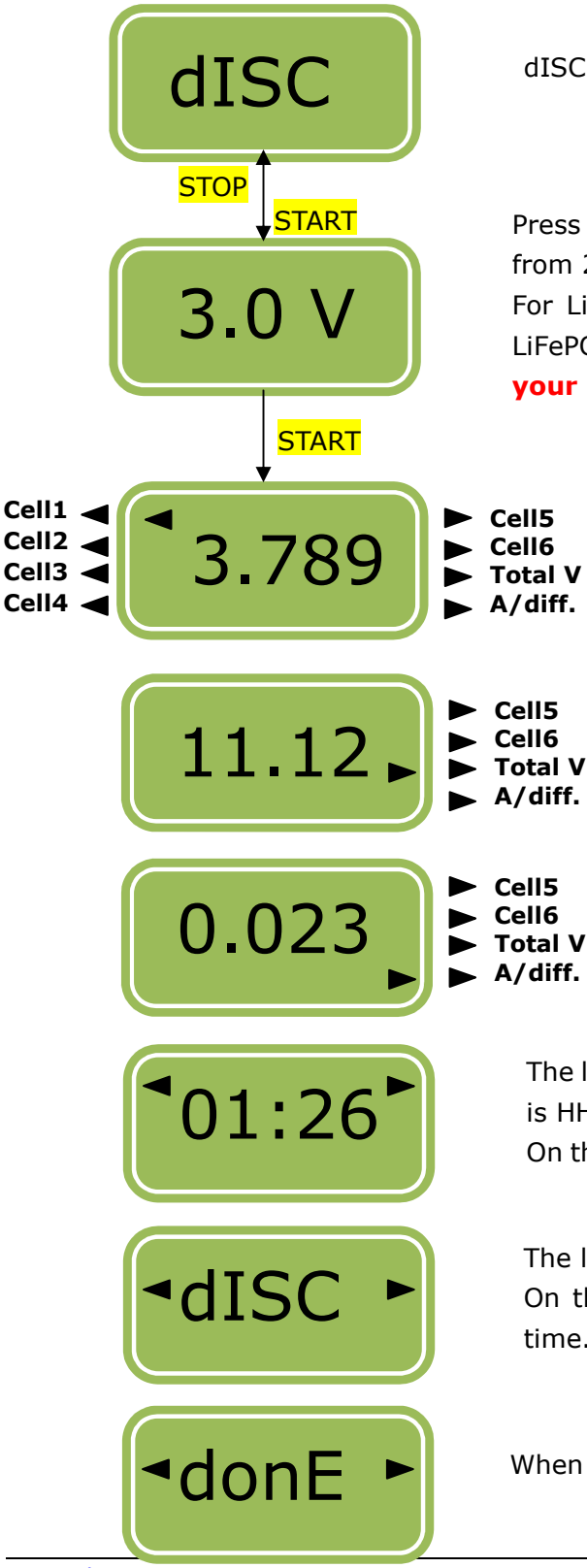
The left LCD display the balancing time. The format is HH:MM. "**:**" flash once time every second.
On the first line, ◄ and ► display at the same time.

The left LCD display the current working mode.
On the second line, ◄ and ► display at the same time

When balance over, the LCD will display DONE.

Discharge LiPo/LiFe battery at dISC mode

At dISC mode, press START button, 650B will discharge the battery, you can set up the cell terminal voltage, and the battery must be connected to balance port on 650B. During discharge, the LCD will display cell voltage, total voltage, difference of cell voltage and running time. It is only for LiPo and LiFe cells.
Press SET button stop displaying, and press again continue.
Press STOP button stop discharging and return main menu.



dISC means DISCHARGE mode.

Press SET button set up the cell terminal voltage, range from 2.0~4.0V, default is 3.0V.
For LiPo cell, the lowest voltage is 3.0V, and 2.0V for LiFePO4 cell, **please set up the value according to your battery type carefully.**

First cell voltage is display on the left LCD.
◄ and ►
indicate the cell number from cell 1 to cell 6.

The left LCD display the battery total voltage of 11.12V.

The left LCD display the difference of voltage of 0.023V.
In charge mode, the ► indicate charge current.

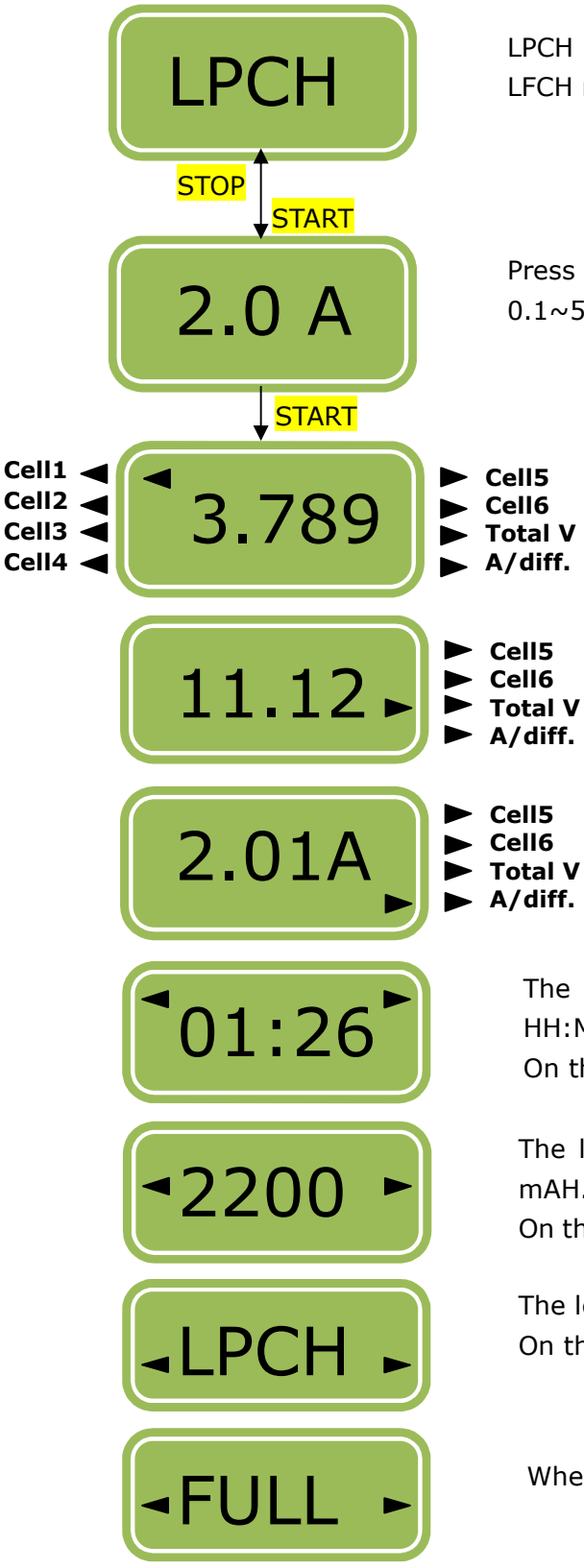
The left LCD display the discharging time. The format is HH:MM. "**:**" flash once time every second.
On the first line, ◄ and ► display at the same time.

The left LCD display the current working mode.
On the second line, ◄and ► display at the same time.

When discharge over, the LCD will display DONE.

Charge LiPo&LiFe battery at LPCH & LFCH mode

At this mode, press START button, 650B will charge while balancing the battery, you can set up the charge current, and the battery must be connected to balance port on 650B. During charge, the LCD will display cell voltage, total voltage, charge current and running time.
Press SET button stop displaying, and press again continue.
Press STOP button stop charging and return main menu.



LPCH means LiPo battery charge mode.
LFCH means LiFePO4 battery charge mode.

Press SET button set up the charge current, range from 0.1~5.0A, default is 2.0A.

First cell voltage is display on the left LCD.
◄ and ►
indicate the cell number from cell 1 to cell 6.

The left LCD display the battery total voltage of 11.12V.

The left LCD display the charge current of 2.01A.
In charge mode, the ► indicate charge current.
In other mode, the ► indicate the difference of cell voltage.

The left LCD display the charging time. The format is HH:MM. "**:**" flash once time every second.
On the first line, ◄and ► display at the same time.

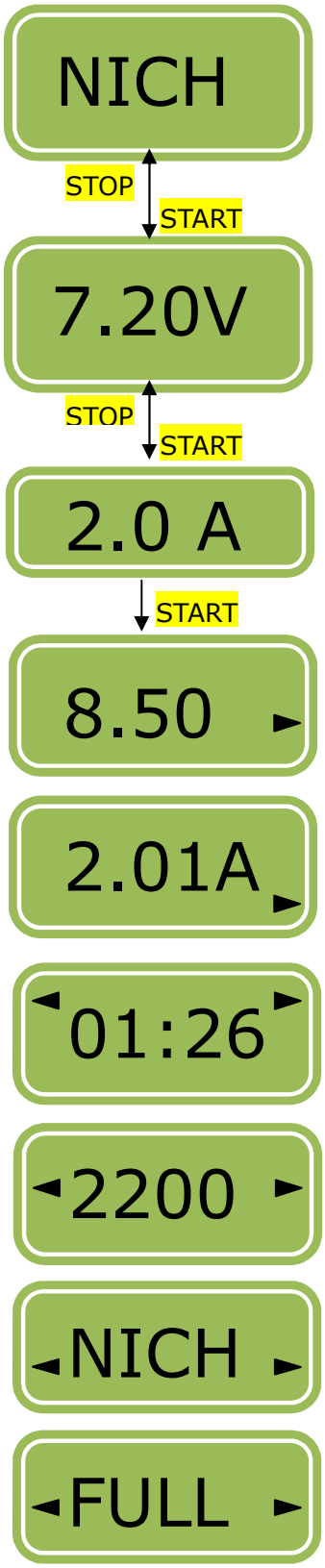
The left LCD display the charging capacity. The unit is mAH.
On the second line, ◄ and► display at the same time.

The left LCD display the current working mode.
On the third line, ◄ and ► display at the same time.

When charge over, the LCD will display FULL.

Charge NiMh/NiCd battery at NICH mode

At this mode, press START button, 650B will charge the battery, you can set up the cell count and charge current. During charge, the LCD will display total voltage, charge current and running time. The function is very useful for unbalanced battery pack. The forming charge will recover balance status.
Press SET button stop displaying, and press again continue.
Press STOP button stop charging and return main menu.



NICH means NiMh/NiCd battery charge mode.

Press SET button set up the cell count, range from 1.2V(**1S**)~18.0V(**15S**), default is 7.2V(**6S**).

Press SET button set up the charge current, range from 0.1~5.0A, default is 2.0A.

The left LCD display the battery total voltage of 8.50V.

The left LCD display the charge current of 2.01A.
In charge mode, the ► indicate charge current.
In other mode, the ► indicate the difference of cell voltage.

The left LCD display the charging time. The format is HH:MM. "**:**" flash once time every second.
On the first line, ◄and ► display at the same time.

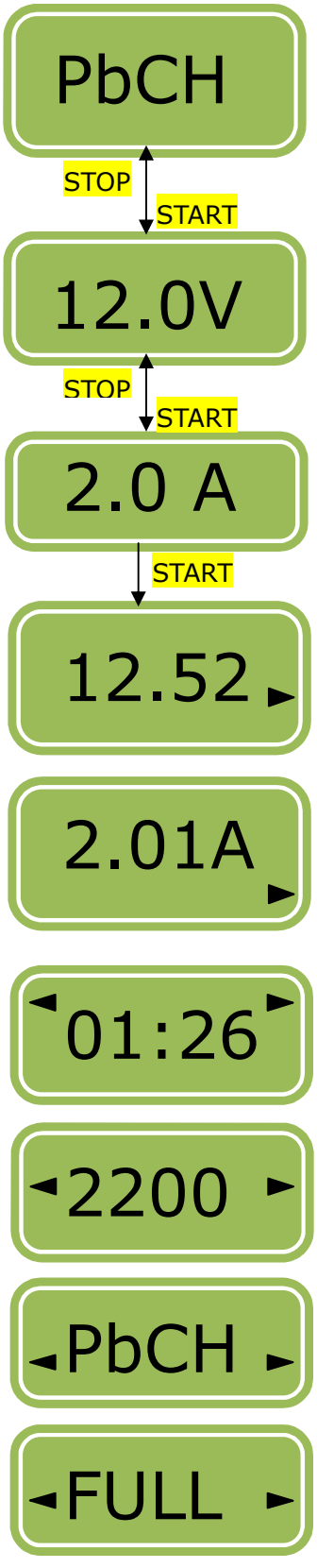
The left LCD display the charging capacity. The unit is mAH.
On the second line, ◄ and► display at the same time.

The left LCD display the current working mode.
On the third line, ◄ and ► display at the same time.

When charge over, the LCD will display FULL.

Charge lead acid (Pb) battery at PbCH mode

At this mode, press START button, 650B will charge the battery, you can set up the cell count and charge current. During charge, the LCD will display total voltage, charge current and running time.
Press SET button stop displaying, and press again continue.
Press STOP button stop charging and return main menu.



PbCH means lead acid (Pb) battery charge mode.

Press SET button set up the cell count, range from 2.0V(**1S**)~20.0V(**10S**), default is 12.0V(**6S**).

Press SET button set up the charge current, range from 0.1~5.0A, default is 2.0A.

The left LCD display the battery total voltage of 12.52V.

The left LCD display the charge current of 2.01A.
In charge mode, the ► indicate charge current.
In other mode, the ► indicate the difference of cell voltage.

The left LCD display the charging time. The format is HH:MM. "**:**" flash once time every second.
On the first line, ◄ and ► display at the same time.

The left LCD display the charging capacity. The unit is mAH.
On the second line, ◄ and► display at the same time.

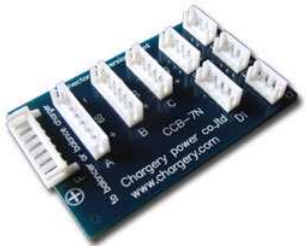
The left LCD display the current working mode.
On the third line, ◄ and ► display at the same time.

When charge over, the LCD will display FULL.

Accessories below coming with the charger as standard parts

CW2, input leads, DC coaxial female to Alligator.	**CEHP-7X** Conversion Wire for balance charge	**CW9,** Temperature Sensor.
		
CCB-7N-XH for 2S to 6S, 3*2S, 2*3S, Align/ Chargery battery pack	**CW3,** Output leads 4mm gold banana to Deans	
		

The following adapter board is optional parts

CCB-7N-EH for 2S to 6S, 3*2S, 2*3S, Kokam/ Graupher battery pack	**CCB-7TPQF** for 2S, 3S, 4S, 5S, 6S TP, Flight power and Polyquest, Hyperion batteries pack	**CCB-723TPQF** for 2*3S and 3*2S TP, Flight power and Polyquest, Hyperion batteries pack
		

Warning and error message

When input voltage is over 18V or under 10V, the when will display IN E.

When battery temperature reaches the set up cut-off value, the charger will stop charging, and display Err 1.

Maximum circuit power chart

When the battery voltage is more than 10V, the actual charging current delivered to the battery will be automatically limited, so as not to exceed the charger's rated charging power of 50 watts. The actual feeding current will be as follows:

Maximum charge current for various battery configurations

@ input power > 60W

battery type	cell counts	rated voltage(V)	Charge current(A)
LiPo	1	3.7	5.0
	2	7.4	5.0
	3	11.1	4.5
	4	14.8	3.4
	5	18.5	2.7
	6	22.2	2.3
LiFe	1	3.3	5.0
	2	6.6	5.0
	3	9.9	5.0
	4	13.2	3.8
	5	16.5	3.0
	6	19.8	2.5

battery type	cell counts	rated voltage(V)	Charge current(A)
NIMH/NICD	1	1.2	5.0
	2	2.4	5.0
	3	3.6	5.0
	4	4.8	5.0
	5	6.0	5.0
	6	7.2	5.0
	7	8.4	5.0
	8	9.6	5.0
	9	10.8	5.0
	10	12.0	4.2
	11	13.2	3.8
	12	14.4	3.5
	13	15.6	3.2
	14	16.8	3.0
	15	18.0	2.8
Pb	1	2.0	5.0
	2	4.0	5.0
	3	6.0	5.0
	4	8.0	5.0
	5	10.0	5.0
	6	12.0	4.2
	7	14.0	3.6
	8	16.0	3.1
	9	18.0	2.8
	10	20.0	2.5

Safety information

Never leave the charger unattended when it is connected to its power supply. If any malfunction is observed immediately terminated charging and refer to the operation instructions.

- Keep away the unit from dust, damp, rain, heat direct sunshine and vibration. Do not drop it.
- The charger and the battery to be charged should be set up on a heat-resistant, non-inflammable and non-conductive surface. Never place them on a car seat, carpet or similar.
- Keep all the inflammable volatile materials well away from operating area.
- Do not attempt to charge the following types of battery:
  - Battery pack, which consists of different types of cell (including different manufacturers).
  - Non-rechargeable batteries (Explosion hazard).
  - Faulty or damaged battery.

Those warnings and safety notes are particularly important. Please follow the instructions for a maximum safety; otherwise the charger and the battery can be damaged violently. And also it can cause a fire to injure a human body or to lose the property.

Warranty and Service

Chargery Power Co., Ltd. as manufacture of R/C model power warrants its CHARGERY charger and battery pack 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. It is best to carefully check your charger before considering returning it as problems in setup, cabling, or power supply are much more common than defects in the charger. If there is damage stemming from these causes within the stated warranty period, the company will, at its option, repair or replace the charger for a service charge not greater than 50% of its then current retail list price.

Date of purchase/delivery:
Dealer:

NOTE:

CHARGERY hope customers notify any change or modification made to this device.

Welcome any suggestions at jasonwang3a@163.com

Thanks and enjoy the power!

Charging Expert