

B6ACneo AC/DC Smart Charger Instruction Manual

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Introduction

Congratulations on your choice of SkyRC B6ACneo smart charger.

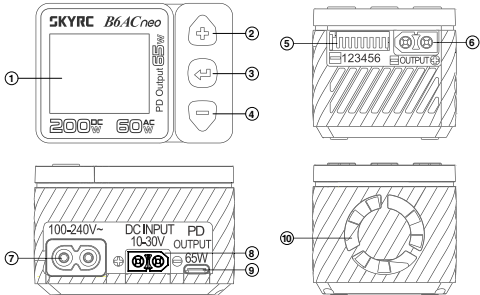
B6ACneo boasts a stylish and ultra-compact design, but operating it effectively requires some knowledge. These operating instructions aim to quickly acquaint you with its functions. Therefore, it's vital to thoroughly review the Operating Instructions, Warnings, and Safety Notes before using B6ACneo. We hope it provides years of satisfaction and success.

B6ACneo, an AC/DC smart charger with a 200W maximum output, accommodates various battery chemistries (LiPo/LiFe/Lilon/LiHV/NiMH/NiCd/Pb) and serves as a power supply, offering adjustable voltage (2.0V-27.0V) and current (1.0A-10.0A) per output. The 65W USB-C PD 3.0 charging port ensures swift device charging. Additionally, it allows voltage measurement without power on, simplifying battery voltage assessment.

Before initial use, please read these INSTRUCTIONS, WARNINGS, and SAFETY NOTES carefully!

Mishandling batteries and chargers poses significant risks, including fire and explosions!

Chart



- ① LCD display
- ② Selection Buttons
- ③ Confirm Button
- ④ Selection Buttons
- ⑤ Balance port
- ⑥ Main Port / DC Output Port
- ⑦ AC Input 100-240V
- ⑧ DC Input 10.0-30.0V/12A
- ⑨ PD Output 65W
- ⑩ Smart Ventilation Fan

Package

1*SkyRC B6ACneo Charger

1*AC Power Cord

1*Quick Start Guide

Specifications











Item	Option	Specs
Input Voltage	AC	100-240V (50/60Hz)
	DC	10.0-30.0V
Input Current	DC	12.0A
Charge Power	AC	60W
	DC	200W
Discharge Power	Main Port	5W
	Main Port+Balance Port	19W Max (LiPo/6S)
Charge Current	LiPo/LiFe/LiIon/LiHV/ NiMH/NiCd/Pb	0.2-10.0A
Discharge Current	LiPo/LiFe/LiIon/LiHV/ NiMH/NiCd/Pb	0.1-2.0A
Balance Current	LiPo/LiFe/LiIon/LiHV	500mA Max
Trickle Charge Current	NiMH/NiCd	200mA & OFF

Item	Option	Specs
Battery Types	LiPo/LiFe/Lilon/ LiHV	1-6S
	NiMH/NiCd	1-15S
	Pb	3S/6S
Working Modes	LiPo/LiFe/Lilon/ LiHV	Balance CHG, Charge, Storage, Discharge
	NiMH/NiCd	Charge, Re-Peak, CYCLE_C_D, CYCLE_D_C, Dishcharge
	Pb	Normal, AGM Charge, Cold Charge, Discharge
DC Power Supply	Voltage	2.0-27.0V
	Current	1.0-10.0A
	Power	AC Input: 60W DC Input: 200W
USB Type-C Output	QC3.0 / PD	5V-3A, 9V-3A, 12V-3A, 20V-3.25A Max. 65W

Item	Option	Specs
Size	Length*Width*Height	70.6*50.6*46mm
Weight	Net Weight	150g
Working Environment	Working Temperature	0°C -40°C
	Working Humidity	5%-75%
Storage Environment	Storage Temperature	-10°C -70°C
	Storage Humidity	5%-75%

Warning

B6ACneo is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the charger by a person responsible for their safety. Failure to exercise caution while using this product and comply with the following warnings could result in a product malfunction, electrical issues, excessive heat, FIRE, and ultimately injury and property damage.

-  Never leave charging batteries unattended during use.
-  Never charge batteries overnight.
-  Never attempt to charge dead, damaged, or wet battery packs.
-  Never attempt to charge a battery pack containing different types of batteries.
-  Never charge batteries in extremely hot or cold places or place in direct sunlight.
-  Never charge a battery if the cable has been pinched or shorted.
-  Never connect the charger if the power cord has been pinched or shorted.
-  Never attempt to dismantle the charger or use a damaged charger.
-  Never attach your charger to both AC and DC power source at the same time.
-  Always use the charger with the correct charging and discharging program.

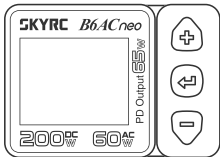
- ⚠ Always use only rechargeable batteries designed for use with this type of charger.
- ⚠ Never use the charger on car seats, carpets, or similar surfaces.
- ⚠ Always operate the charger away from flammable and explosive materials.

Standard Battery Parameters

	LiPo	Lilon	LiFe	LIHV	MIMH	NiCd	Pb
Nominal voltage	3.7V/cell	3.6V/cell	3.3V/cell	3.8V/cell	1.2V/cell	1.2V/cell	2.0V/cell
Max. charge voltage	4.22V/cell	4.12V/cell	3.67V/cell	4.37V/cell	1.5V/cell	1.5V/cell	2.4V/cell
Storage voltage	3.8V/cell	3.7V/cell	3.3V/cell	3.85V/cell	N/A	N/A	N/A
Allowable fast charge current	≤1C	≤1C	≤4C	≤1C	1C-2C	1C-2C	≤0.4C
Min. discharge voltage	3.0-3.4V/ cell	2.9-3.3V/ cell	2.6-3.0V/ cell	3.1-3.5V/ cell	0.6- 1.0V/cell	0.6- 1.0V/cell	1.8V~2.0V/ cell

Select the correct operating procedure in accordance with the battery parameters. Incorrect settings may cause the battery to burn or even explode.

Buttons Explained



Go through the menus or increase the parameter value



Enter the setting, confirm the choice and stop the progress



Go through the menus or decrease the parameter value

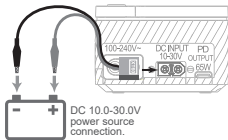
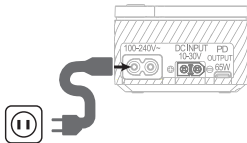
Power and Battery Connection

1. Connect to the power source

There are two options of inputs for SkyRC B6ACneo:

AC 100-240V power source connection.

12V DC Battery / DC power supply connection.



2. Connect the battery



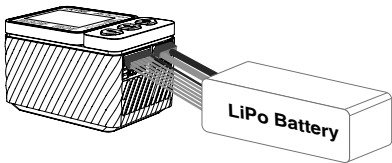
WARNING!

TO AVOID SHORT CIRCUITS, ALWAYS CONNECT THE CHARGE LEADS TO THE CHARGER FIRST AND THEN TO THE BATTERY. REVERSE THE SEQUENCE WHEN DISCONNECTING.

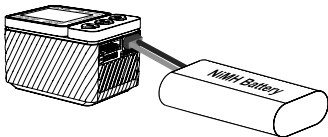
1) LiPo Battery Connection with Balance Adapter

For safety reasons, it is highly recommended to charge Lithium batteries (LiPo, Lilon, LiFe and LiHV) using Balance CHG mode unless the battery comes without a balance connector.

The battery balance connector must connect to the charger with the black wire aligned with the negative marking. Ensure correct polarity!



2) NiMH/NiCd or Pb Battery Connection



Charging

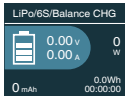
Battery Type	Working Mode	Description
LiPo Lilon LiFe LiHV	Balance CHG	This mode is to balance charge the lithium battery based on the charging rate the user set. It can balance each cells of the battery.
	Charge	This mode is to charge the lithium battery based on the charging rate selected.
	Storage	This mode is to store the battery via charging or discharging its voltage to a specific storage value.
	Discharge	This mode is to discharge the lithium battery based on the discharging rate selected.

NiMH NiCd	Charge	This mode is to charge the NiMH/NiCd battery based on the charging rate selected.
	Re-Peak	In re-peak charge mode, the charger can peak charge the battery twice in a row automatically. This is good for confirming the battery is fully charged.
	Cycle_C_D	1 to 3 cyclic and continuous process of discharge>charge is operable for refreshing and restoring the performance of NiMH/ NiCd batteries.
	Cycle_D_C	1 to 3 cyclic and continuous process of charge>discharge is operable for refreshing and restoring the performance of NiMH/ NiCd batteries.
	Discharge	This mode is to discharge the NiMH/NiCd battery based on the discharging rate selected.
Pb	Normal	This mode is to charge the Pb battery based on the charging rate selected.
	AGM Charge	This mode is to charge the AGM battery based on the charging rate selected.
	Cold Charge	This mode is to charge the Pb battery under a low temperature based on the charging rate selected.
	Discharge	This mode is to discharge the Pb battery based on the discharging rate selected.


Various operations are applicable depending on the battery type. This chart illustrates operations relevant to different types of batteries.

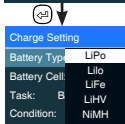
Lithium Battery Program(LiPo/LiFe/Lilon/LiHV)

Here is a flowchart to guide you to set up the program.




Enter Charge Setting

Press  button to enter Charge Setting.



Select Battery Type

Press  button to call out the Battery Type menu, and select LiPo.

Charge Setting

Battery Type	1S
Battery Cell	2S
	3S
Task:	4S
Condition:	5S



Charge Setting

Battery	Banlance CHG
Battery (Charge
	Storage
Task:	Discharge
Conditio	



Charge Setting

Condition:	4.18V
	4.19V
Charge Cur	♥ 4.20V
⊙ Start	4.21V
↶ Back	4.22V



Select Battery Cell

Press and button to select the correct battery cells.

Select Task

Press and button to select your desired working mode.

Select Condition

Press and button to select the terminal charging voltage.

Charge Setting

Condition:	9.6A
Charge Current:	9.7A
	9.8A
Start	9.9A
Back	10.0A



Charge Setting

Condition:	4.20V
Charge Current:	10.0A
Start	
Back	



Charge Setting

Condition:	4.20V
Charge Current:	10.0A
Start	
Back	




Select Charge/Discharge Current

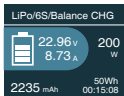
Press  and  button to select the current.

Start




Press  and  button to initiate the program.

Back

Press  and  button to step back to the main interface.



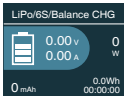
Stop

Press  button to stop the program, If prompted to stop, short-press the  again to confirm, or short-press the  button to return.


Do not connect the battery before turning on the charger!

NiMH/NiCd Battery Program

Here is a flowchart to guide you to set up the program.



Enter Charge Setting

Press  button to enter Charge Setting.



Charge Setting

Battery Type	LiFe
Battery Cell	LiHV
Task:	NiMH
Condition:	NiCd
	PB



Charge Setting

Battery Type	1S
Battery Cell	2S
Task:	3S
Condition:	4S
	5S



Charge Setting

Battery	Charge
Battery	Re-Peak
Task:	CYCLE_C_D
Condition:	CYCLE_D_C
	Discharge



Select Battery Type

Press button to call out the Battery Type menu, and select NiMH.

Select Battery Cell

Press and button to select the correct battery cells.

Select Task

Press and button to select your desired working mode.

Charge Setting

Condition: ♥-4ΔmV

Charge Cur -5ΔmV

-6ΔmV

⊙ Start -7ΔmV

↶ Back -8ΔmV



Charge Setting

Condition: 9.6A

Charge Cur 9.7A

9.8A

⊙ Start 9.9A

↶ Back 10.0A



Charge Setting

Condition: 4.20V



Charge Current: 10.0A

⊙ Start

↶ Back





Select Condition

Press  and  button to set the delta voltage.

Select Charge/Discharge Current

Press  and  button to select the current.

Start

Press  and  button to initiate the program.

Charge Setting

Condition: 4.20V

Charge Current: 10.0A

Start

Back



NiMH/8S/Charge





10.47V
2.53A

25
W




234 mAh

12Wh
00:10:09

Back

Press  and  button to step back to the main interface.

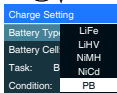
Stop

Press  button to stop the program, If prompted to stop, short-press the  again to confirm, or short-press the  button to return.

Do not connect the battery before turning on the charger!

Pb Lead-Acid Battery Program

Here is a flowchart to guide you to set up the program.



Enter Charge Setting

Press ENTER (↵) to enter Charge Setting;

Select Battery Type

Press (↵) button to call out the Battery Type menu, and select PB.

Charge Setting

Battery Type:	
Battery Cell:	3S
Task:	B 6S
Condition:	



Charge Setting

Battery:	Normal
Battery:	AGM Charge
Task:	Cold Charge
Condition:	Discharge



Charge Setting

Condition:	
Charge Current:	1.80V
	♥ 1.90V
Start:	2.00V
Back:	



Select Battery Cell

Press and button to select the correct battery cells.

Select Task

Press and button to select your desired working mode.

Select Condition

Press and button to set the terminal voltage.

Charge Setting	
Condition:	9.6A
Charge Current:	9.7A
	9.8A
Start	9.9A
Back	10.0A



Charge Setting	
Condition:	4.20V
Charge Current:	10.0A
Start	
Back	



Charge Setting	
Condition:	4.20V
Charge Current:	10.0A
Start	
Back	



Select Charge/Discharge Current

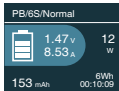
Press and button to select the current.

Start




Press and button to initiate the program.

Back

Press and button to step back to the main interface.

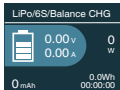


Stop

Press  button to stop the program, If prompted to stop, short-press the  again to confirm, or short-press the  button to return.

Do not connect the battery before turning on the charger!

DC Power



On the main menu, hold the  button for two seconds to enter System Setting>DC Power.



System Setting

Task Parameters >

System Setting >

DC Power >

Battery Meter >



>DC Power

Voltage: 12.0V

Current: 4.2V

Start

Back

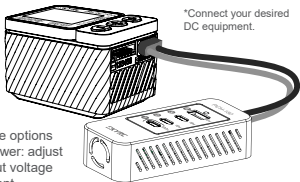


DC Power

CV

20.00v
10.00A 200W

Set: 20.00V 10.00A



*Connect your desired DC equipment.

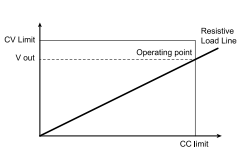
Select the options of DC Power: adjust the output voltage and current.

Select Start to activate the DC Power working mode and then connect your desired DC equipment.

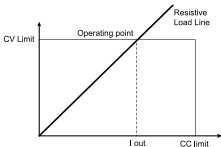
When acting as a digital power supply, B6ACneo can regulate its output voltage or current at a constant level. Constant Current(CC) Mode and Constant Voltage(CV) Mode can switch automatically as follows:

If $R_{load} > (V_{out} / I_{out})$, then the power supply is in CV mode

If $R_{load} < (V_{out} / I_{out})$, then the power supply is in CC mode



Power Supply I-V Diagram, CV Operation



Power Supply I-V Diagram, CC Operation

It is vital for efficient and precise power delivery in various applications for RC professionals

***Benefits of using a CC/CV mode DC power supply explained:**

1. Versatility:

CC/CV power supplies are versatile because they can switch between constant current and constant voltage modes. This makes them suitable for a wide range of applications, from powering delicate electronics to driving high-power devices.

2. Protection:

The CC mode can prevent overcurrent situations, which could damage electronic devices or create hazardous situations. By setting a maximum current limit, the power supply ensures that it won't deliver more current than the device can safely handle.

3. Battery Charging:

CC/CV power supplies are particularly useful for charging lithium-ion batteries, which require a precise charging protocol. Initially, the charger works in CC mode to restore most of the battery's capacity, then switches to CV mode to top off the charge while preventing overcharging.

4. Optimized for Various Loads:

Some loads require a specific voltage to operate correctly, while others need a particular current. A CC/CV power supply can adapt to these needs, providing a stable and suitable power output under various load conditions.

5. Improved Efficiency:

By dynamically switching between modes depending on the load, a CC/CV power supply can often operate more efficiently than a power supply using only one mode.

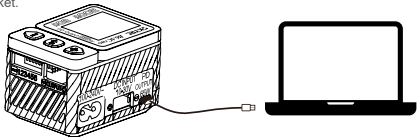
6. Safe for LED driving:

LEDs are current-driven devices, and a slight increase in voltage can lead to a high current, causing damage to LEDs. CC mode allows safe driving of LEDs. CV mode can be useful when LEDs are configured in parallel strings.

USB Type-C PD/QC3.0 Output

With the 65W USB-C PD 3.0 charging port, our RC players can enjoy rapid charging speeds like never before. Whether you're charging your smartphones, tablets, or MacBook, this powerful port ensures that you can fuel up your devices in a fraction of the time.

*The USB Type-C output only works when the charger is plugged into an AC socket.



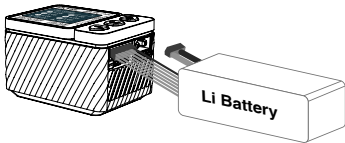
Voltage Calibration (For expert user only)

You can calibrate the voltage directly on the charger with a 6S LiPo battery. For more information, please contact us at info@skyrc.com


Battery Voltage Meter

B6ACneo measures the lithium battery voltage easily and conveniently. Use the balance port to connect the lithium battery directly to B6ACneo.


B6ACneo lights up and displays battery voltage without power on.





Battery Resistance Meter

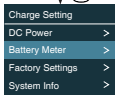
Power on B6ACneo, and hold the  button for seconds to enter the System Setting.

Connect the battery to B6ACneo and scroll down to Battery Meter

Press  button to measure the battery voltage and resistance.

Press  button to check the resistance value.

Press  button to exit the Battery Meter interface.



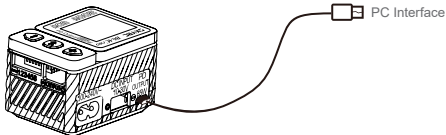
>Battery Meter		mΩ
①	046	④ 027
②	026	⑤ 025
③	024	⑥ 030
Σ	:178mΩ	End



>Battery Meter		V
①	4.05	④ 4.05
②	4.05	⑤ 4.05
③	4.05	⑥ 4.05
Σ	:25.2V	End

Firmware Upgrade

1. Download the latest Charger Master onto your desktop. Unzip and open it;
2. Press the UP and DOWN buttons, then connect the power cord; B6ACneo will power on with a blue screen notice.
3. Connect B6ACneo to your computer via a USB type-C cable;
4. Launch the Charger Master, which will detect the charger automatically;
5. After successful detection, click to check the new version of the firmware;
6. When there is a new version, click to upgrade till the process finishes.



Charge Settings

Short press the ENTER button to enter the Charge Setting.

Menu	Definition
Battery Type	Select the desired battery type. (LiPo, Lilon, LiFe, LiHV, NiMH, NiCd, PB)
Battery Cell	Select the number of battery cells by different battery type. (Li-xx: 1-6S, Ni-xx: 1-15S, Pb: 3S/6S)
Task	Select the work mode to be performed. (Balance CHG, Charge, Storage, Discharge, etc.)
Condition	Set the cut-off voltage.
Current	Set the charge or discharge current.
Start	Start the program.
Back	Back to the main interface.

System Setting

On the main interface, hold the START button for two seconds to enter the System Setting.

Menu	Option	Definition
Task Parameters	Safety Timer	Customize a period for program protection.
	Max.Capacity	Customize the maximum capacity.
	Trickle Charge	Enable/disable trickle charge.
	Holding Voltage	Enable/disable holding voltage If the battery voltage is dropped to a specified value, then it will charge the battery automatically with a small current if it's enabled.
	Back	Back to the previous interface.
System Settings	Language	Select the desired language.
	Min.Input Voltage	Set the minimum voltage for input protection.
	LCD BackLight	Adjust the brightness of the screen.
	Volume	Adjust/Turn off the volume of the key and beep.
	Completion Signal	Choose the way you'd like to be reminded when the program completes. If Repeat is chosen, the charger will play the completion signal every half an hour.
	Warning	Enable/disable the start-up warning.
	Back	Back to the previous interface.

DC Power	Voltage	Set the output voltage. (2.0-27.0V)
	Current	Set the output current. (1.0-10.0A)
	Start	Enable DC power output and return to the main interface.
	Back	Back to the previous interface.
Battery Meter	N/A	Measure the battery voltage and internal resistance. Press - to return to the system setting.
Factory Settings	N/A	Restore to the factory settings.
System Info	N/A	Check the current system status.
System Upgrade	N/A	Upgrade the charger.
Regulatory	N/A	Check the certification information
Back	N/A	Back to the previous interface.

Errors and Warnings

In the event of a fault, the charger will display an error message and sound an alarm.

Error Message	Explanation
DC In Too Low	DC input voltage is lower than preset or min.input voltage!
DC In Too High!	DC input voltage is higher than preset!
Connection Break!	The battery connection is broken!
Overcharge Capacity Limit	The charged capacity is exceeding the limit!
Over Time Limit	The program times out!
Int. Temp Too High	The internal temperature is high!
Over Load	The charger is overloaded!
Reversed Polarity	The battery connection is reversed!
Fully Charged	The battery is fully charged already!
Outlet Overload	The output is overloaded.
Balance Connection Error	The balance connection is incorrect.
Cell Error	The cells do not match.
Battery Type Error	The battery type is wrong!
Cell Volt Diff.	The voltage difference between each cell is high.
PD In Use, Charging Output N/A!	PD In Use, Charging Output N/A!

Conformity Declaration

SkyRC B6ACneo satisfies all relevant and mandatory CE directives and FCC Part 15 Subpart B.

Test Standards	Title	Result
EN 60335-1	Household and similar electrical appliances - Safety - Part 1: General requirements	Conform
EN 60335-2-29	Household and similar electrical appliances – Safety – Part2-29: Particular requirements for battery chargers.	Conform
EN 55014-1	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	Conform
EN 55014-2	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity Product Family Standard	Conform
EN 61000-3-2	Electromagnetic compatibility (EMC) – Part 3-2: – Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	Conform
EN 61000-3-3	Electromagnetic compatibility (EMC) - Part 3-3: Limitation of voltage supply systems for equipment with rated current ≤ 16 A.	Conform
FCC Part Subpart 15B	Title 47 Telecommunication PART 15 - RADIO FREQUENCY DEVICES Subpart B - Unintentional Radiators	Conform



Warranty and Service

Liability Exclusion

This charger is designed and approved exclusively for use with the types of battery stated in this Instruction Manual. SkyRC accepts no liability of any kind if the charger is used for any purpose other than that stated. We are unable to ensure that you follow the instructions supplied with the charger, and we have no control over the methods you employ for using, operating, and maintaining the device. For this reason, we are obliged to deny all liability for loss, damage, or costs that are incurred due to the incompetent or incorrect use and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of those SkyRC products which were immediately and directly involved in the event in which the damage occurred.

Warranty and Service

We guarantee this product to be free of manufacturing and assembly defects for a period of one year from the time of purchase. The warranty only applies to material or operational defects, which are present at the time of purchase. During that period, we

will repair or replace free of service charge for products deemed defective due to those causes.

This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification, or as a result of failure to observe the procedures outlined in this manual.

Note:

1. The warranty service is valid in China only.
2. If you need warranty service overseas, please contact your dealer in the first instance, who is responsible for processing guarantee claims overseas. Due to high shipping costs, and complicated custom clearance procedures to send back to China, please understand that SkyRC can't provide warranty service to overseas end users directly.
3. If you have any questions which are not mentioned in the manual, please feel free to send an email to info@skyrc.com

SKYRC

B6ACneo

AC/DC Smart Charger

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<https://www.skyrc.com>

If you have any questions about this document, please contact
SkyRC by sending a message to **support@skyrc.com**

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