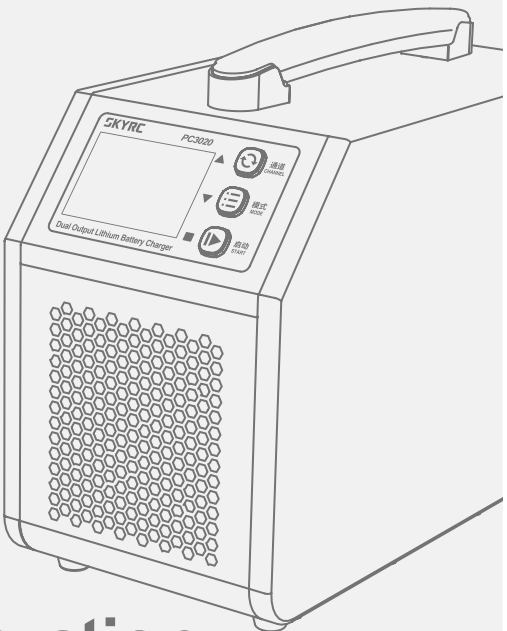
PC3020 Series

v. 61

Dual-Output Lithium Battery Charger



Instruction Manual

SKYRC

Introduction

The PC3020 Series is a dual-channel smart charger specifically designed for high-cell-count lithium batteries. With a maximum output power of up to 3000W, it supports three charging modes: Fast Charge, Standard Charge, and Storage. Equipped with a CAN communication interface and balance ports, it is compatible with both mainstream smart batteries and standard lithium batteries—offering safe, reliable, and efficient charging performance.

This series includes two models:

- **PC3020-1: Supports dual-channel charging for 12–22 cell LiPo / LiHV batteries**
- **PC3020-2: Supports dual-channel charging for 12–24 cell LiPo / LiHV batteries**

Be sure to read the user manual and safety guidelines before operating the device.

Features

- Customizable CAN communication protocol;
- Supports two 12–24S LiPo / LiHV batteries (range depends on model);
  PC3020-1: 12–22S;
  PC3020-2: 12–24S;
- Maximum output power: 3000W;
- Three charging modes: Fast, Standard, and Storage;
- Dual-language (Chinese/English);
- Adjustable charge cut-off voltage;
- Battery voltage monitoring;
- Firmware upgradable via Type-C port;

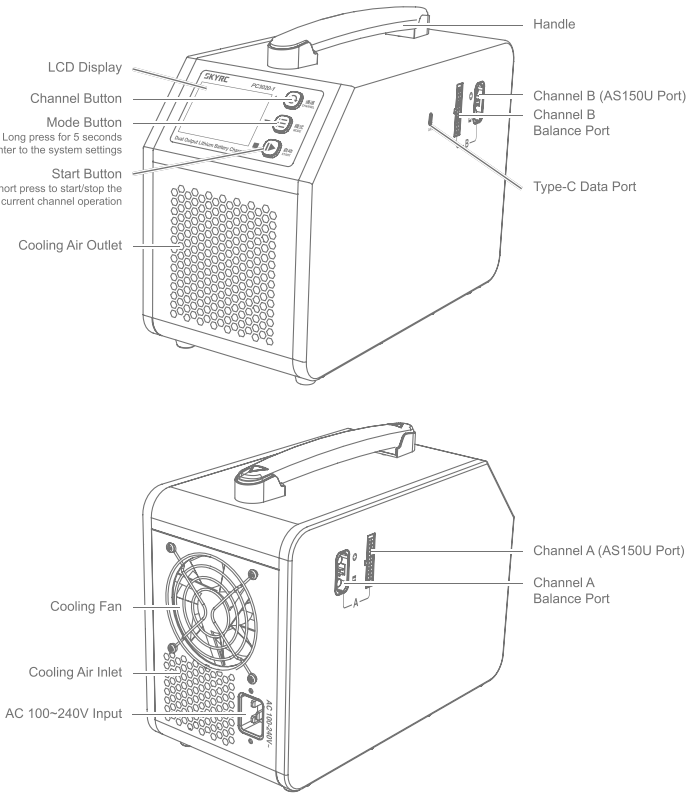
In the Box

PC3020 charger *1

AC power cord *1

Instruction Manual*1

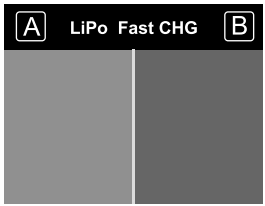
Get PC3020


Handle
LCD Display
Channel Button
Mode Button
Long press for 5 seconds enter to the system settings
Start Button
Short press to start/stop the current channel operation
Cooling Air Outlet
Channel B (AS150U Port)
Channel B Balance Port
Type-C Data Port
Channel A (AS150U Port)
Channel A Balance Port
Cooling Fan
Cooling Air Inlet
AC 100~240V Input
GKYRC
PC3020 /
Dual Output Lithium Battery Charger
AC 100~240V~

Operating Instructions

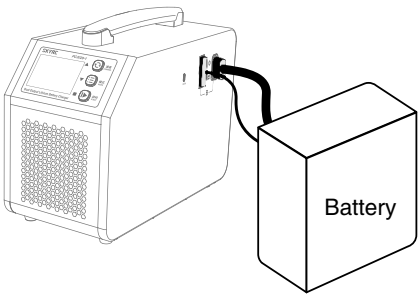
1. Power On

Connect to AC power and the LCD screen will display the following interface:



2. Connect the Battery

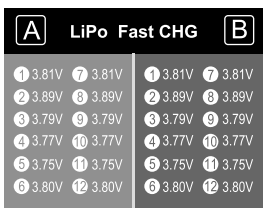
Connect the battery to the charger as shown below:



3. Select Charging Mode

Short press the Mode button to choose the desired mode:

Fast Charge; Standard Charge; Storage Mode

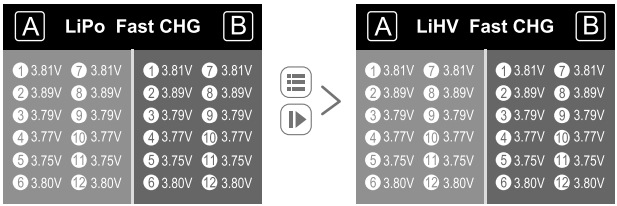


Fast CHG	Charges the channel with higher battery voltage first, followed by the lower one.
STD CHG	Charges the lower-voltage channel until it nearly matches the higher one, then both charge simultaneously.
STO CHG	Both channels charge/discharge simultaneously, following the same logic as the Standard Charge.

Warning: Ensure the correct battery type (LiPo or LiHV) is selected before charging. Incorrect settings may damage the battery and could cause fire or explosion.

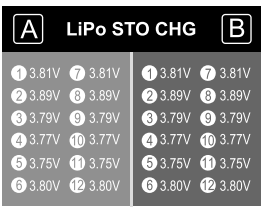
Battery Type Switching

Press and hold both the Mode and Start buttons for 3 seconds to switch between LiPo and LiHV battery types.



Battery Storage Mode

If the lithium battery will not be used for an extended period, it is recommended to use Storage Mode and adjust it to the appropriate voltage range for storage based on the battery type, in order to extend battery lifespan.



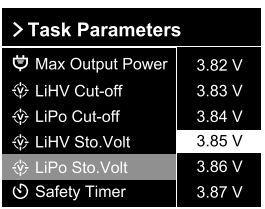
Cut-Off Voltage Setting

Long press the Mode button for 5 seconds to enter the System Settings menu.

Under Task Parameters, you can set and save the desired voltages.

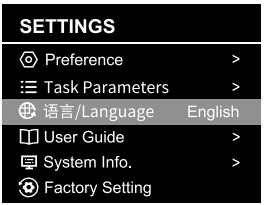
The following voltages are customizable:

- LiHV Cut-off
- LiPo Cut-off
- LiHV Sto. Volt
- LiPo Sto. Volt



Language Setting

PC3020 supports two languages: Chinese/English. To change the language, long-press the Mode button for 5 seconds to enter System Settings, then navigate to Language and select your preferred option. Return to save the settings.

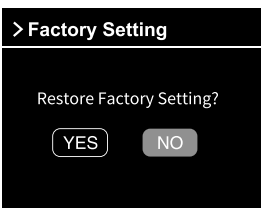


Factory Setting

Press and hold the Mode button for 5 seconds to enter the System Settings menu.

Select Factory Setting, then confirm by choosing YES.

The charger will restore factory settings and restart automatically.



Error Messages Explained

Error Message	Explanation
MAIN PORT BROKEN!	No valid battery voltage detected!
BAT COMM ERR!	Battery protocol does not match charger protocol!
AC INPUT ERROR!	Invalid AC input voltage
HI POWER TEMP!	Internal power over-temperature protection
HI DC VOLT!	Internal power over-voltage protection
BAT TEMP PROT!	Battery over-temperature protection
OPEN-CIRCUIT PROT!	Open-circuit protection (output)
CELL VOLT DIFF!	Excessive cell voltage difference detected
BAL PORT ERROR!	Balance circuit voltage error!
BAL PORT VOLT HIGH!	Balance voltage out of range!

POWER COMM BROKEN!	No power output!
UNCALIBRATED!	Factory calibration data lost!
POWER SHORT PROT!	Short-circuit protection (output)!
BAL PORT MISMATCH!	Balance port voltage doesnâ€™t match charge mode.
REVERSED POLARITY!	Reverse polarity detected
INNER COMM ERROR!	Dual-channel communication error
INNER TEMP ERROR!	The internal temperature is high!
TIME LIMIT!	The program has timed out!
CAPACITY LIMIT!	Charging has reached the set limit.

Specifications

Operating Voltage	AC Input	100V-240V~ 50/60HZ
Max. Output Power		100-120V 1500W 176-290V 3000W
Battery Types and Cell Count	LiPo/LiHV	12-24S
Charge Termination Voltage	LiPo	4.20V (4.15-4.25V Adjustable)
	LiHV(Defualt 4.35V)	4.35V (4.25-4.50V Adjustable)
Storage Cut-off Voltage	LiPo	3.85V (3.75-3.90V Adjustable)
	LiHV	3.90V (3.85-3.90V Adjustable))
Charge Current (AC220V)	Standard Charge	Single Channel 25A Max Dual Channel 45A Max
	Fast Charge	45A Max
	Storage	Single Channel 20A Max Dual Channel 40A Max
Charge Current (AC120V)	Standard Charge	Single Channel 20A Max Dual Channel 20A Max
	Fast Charge	20A Max
	Storage	Single Channel 20A Max Dual Channel 20A Max
Storage Discharge Power		Main+Balance ports 200W Max Main port 95W Max
Balance Current	LiPo/LiHV	600~1400mA
Dimensions		305x148x240mm
Weight		Approximately 6.94 kg

⚠ Warning

These warnings and safety instructions are extremely important. Please strictly follow the instructions in the manual to ensure safety. Improper operation may damage the charger and battery, and in severe cases, may cause a fire.

- Do not use the charger unattended. If any abnormal function occurs, immediately stop charging and refer to the manual to identify the cause.
- Keep the charger away from dust, moisture, rain, high temperatures, direct sunlight, and strong vibrations. Do not drop or impact the charger.
- The charger supports an AC input voltage of 100-240V.
- Place the charger on a heat-resistant, non-flammable, and insulated surface. Do not place it on car seats, carpets, or similar locations. Ensure that flammable or explosive materials are kept away from the charger's operating area.
- Ensure that you fully understand the specifications of the battery being charged/discharged and that the charger settings match the battery.

Incorrect settings may damage both the charger and the battery. Overcharging may cause a fire or even an explosion.

Do not charge or store the following types of batteries:

- Battery packs composed of different models (including those from different manufacturers).
- Batteries that are already fully charged or only slightly discharged.
- Batteries that can no longer be charged (may cause explosions).
- Batteries with special charging technology requirements.
- Damaged or defective batteries.
- Batteries with built-in combination circuits or protection circuits.
- Batteries installed in other devices or connected to additional components.
- Rechargeable batteries not confirmed by the manufacturer as suitable for the charger's current capacity.

Before starting the charging process, always check the following three points:

- Have you selected the appropriate program settings?
- Have you set the correct charging current?
- Are all connections secure? Ensure there is no poor contact in the wiring.

Charging

During charging, the amount of energy delivered to the battery can be calculated by multiplying the charging current by the charging time. The allowable charging current varies depending on the type and performance of the battery, and this information is typically provided by the battery supplier. If the supplier does not explicitly state that the battery can be charged at a high rate, please use the normal charging rate.

Connecting the battery to the charger terminals: The red wire is the positive terminal, and the black wire is the negative terminal. Due to differences in wire and connector resistance, the charger cannot detect the internal resistance of the battery pack. For the charger to function properly, the connector must have a sufficiently large conductor cross-section and high-quality gold-plated terminals.

Refer to the battery manufacturer's manual for charging methods, and follow their recommended charging current and time. This is especially critical for lithium batteries, which must be charged strictly according to the manufacturer's instructions.

- Pay close attention to the wiring of lithium batteries.
- Do not disassemble the battery pack arbitrarily.

It must be emphasized that lithium battery packs can be connected either in series or in parallel. When connected in parallel, the total battery capacity is calculated by multiplying the capacity of a single cell by the number of cells, while keeping the total voltage constant. If the voltage is unbalanced, it may cause a fire or even an explosion. Therefore, we generally recommend charging lithium batteries in series.

The charger is suitable for individuals aged 14 and above. Those with behavioral or mental disabilities, or those lacking experience, should use the charger under supervision or guidance. Children should not play with the charger. Children should not clean or maintain the charger without supervision.

If the power cord is damaged, please return it to the manufacturer, supplier, or a qualified technician for replacement to avoid potential hazards.

Liability Exclusion

This charger is designed and approved exclusively for use with the types of the 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 which 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 that 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 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

The warranty service is valid in China only.

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 cost, complicated custom clearance procedures to send back to China. Please understand SkyRC can't provide warranty service to overseas end users directly. If you have any questions which are not mentioned in the manual, please feel free to send email to info@skyrc.com

Declaration of Conformity

SkyRC PC3020 complies with all applicable and mandatory CE directives, as well as FCC Part 15 Subpart B requirements.

SKYRC

Manufactured by
SKYRC TECHNOLOGY CO., LTD.

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