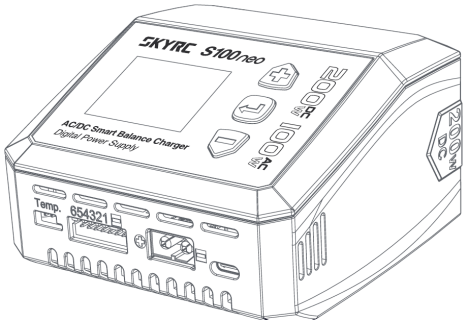
S100neo

AC/DC Smart Balance Charger
Instruction manual



Before initial use, please read these instructions, warnings and safety notes carefully. Mishandling batteries and chargers poses significant risks, including fire and explosion.

Manufacturer: SKYRC TECHNOLOGY CO., LTD. · Importer: Rotorama, s.r.o.

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1. Introduction and safety

1.1 Introduction

Congratulations on your choice of the SkyRC S100neo smart charger. S100neo 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 is vital to thoroughly review the operating instructions, warnings and safety notes before using S100neo.

S100neo is an AC/DC smart charger with a maximum output of 200 W. It accommodates various battery chemistries (LiPo/LiFe/LiIon/LiHV/NiMH/NiCd/Pb) and also serves as a power supply with adjustable output voltage (2.0–30.0 V) and current (1.0–12.0 A). Additionally, it allows voltage measurement without power on, simplifying battery voltage assessment.

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

1.2 What is included

- SkyRC S100neo charger – 1 pc
- user manual – 1 pc
- AC power cord – 1 pc

1.3 Warnings

The charger may only be used by persons over 14 years of age who have read this manual.

Failure to exercise caution while using this product and to 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 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 an AC and a 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 charge non-rechargeable (primary) cells – they may burst or catch fire.
- Charge lead-acid batteries only in a well-ventilated place.
- Never use the charger on car seats, carpets or similar surfaces.
- Always operate the charger away from flammable and explosive materials.

1.4 Standard battery parameters

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

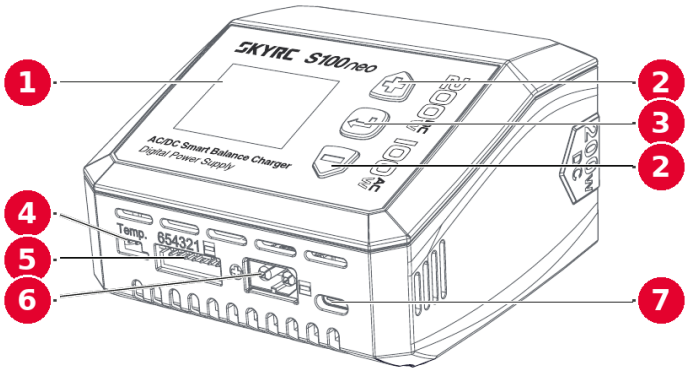
Type	Nominal voltage	Charge voltage	Storage voltage	Allowable fast charge current	Min. discharge voltage
LiPo	3.7 V	4.15–4.25 V	3.75–3.90 V	≤ 1C	3.0–3.4 V
LiIon	3.6 V	4.05–4.25 V	3.70–3.85 V	≤ 1C	2.9–3.3 V
LiFe	3.3 V	3.58–3.70 V	3.25–3.40 V	≤ 4C	2.6–3.0 V
LiHV	3.8 V	4.25–4.50 V	3.85–3.95 V	≤ 1C	3.1–3.5 V
NiMH	1.2 V	–	–	≤ 1C	0.6–1.0 V
NiCd	1.2 V	–	–	≤ 1C	0.6–1.0 V
Pb	2.0 V	2.30–2.75 V	–	≤ 0.4C	1.8–2.0 V

All voltages are given per cell. The values in the table are the ranges the charger allows you to set.

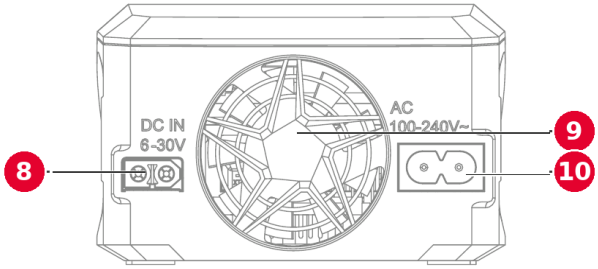
※ A fully charged Li-Po cell has 4.20 V, a LiHV cell 4.35 V. For storage, bring lithium batteries to approx. 3.8 V/cell (Storage mode). Always choose the charge current according to the battery manufacturer's specifications.

2. Meet S100neo

2.1 Charger overview



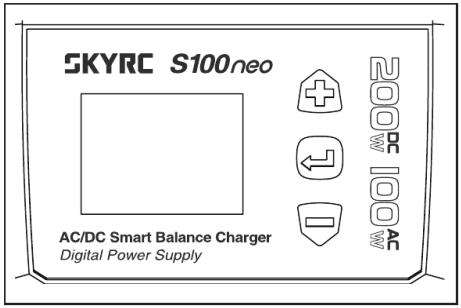
Front view



Rear view

① LCD display
② selection buttons (**+** and **−**)
③ confirm button **ENTER**
④ temperature sensor port (Temp.)
⑤ balance port
⑥ main (charge and output) port
⑦ USB Type-C port
⑧ DC input 6.0–30.0 V / 12 A
⑨ smart ventilation fan
⑩ AC input 100–240 V

2.2 Buttons explained



Go through the menus or increase the parameter value.

ENTER – enter the setting, confirm the choice and stop the progress. A short press on the main screen opens the *Charge Setting* menu, holding it for approx. 2 s opens the *System Setting* menu.

Go through the menus or decrease the parameter value.

2.3 Specification

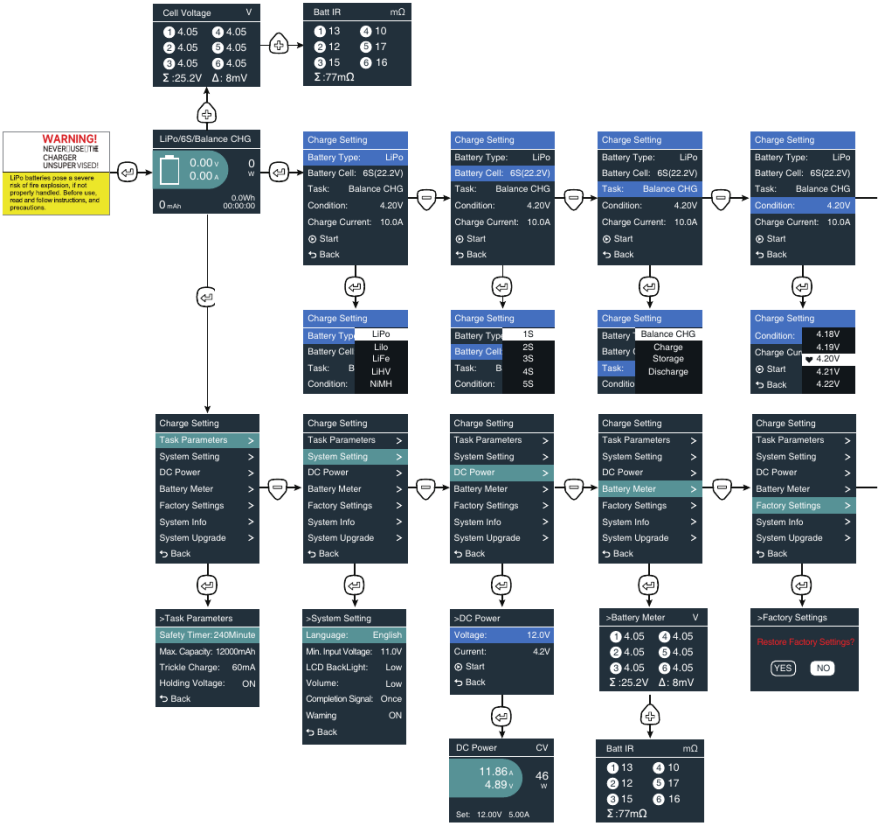
Item	Option	Specification
Model	–	S100neo
Input voltage	AC	100–240 V (50/60 Hz)
	DC	6–30 V
Input current	DC	12.0 A
Charge power	AC	100 W (±10 %)
	DC	200 W (±10 %)
Discharge power	main port	5 W (±20 %)
	main port + balance port	max. 20 W (LiPo 6S discharge)
Charge current	LiPo/LiIon/LiFe/ LiHV/NiMH/NiCd/Pb	0.1–0.5 A (±0.1 A) 0.6–12 A (±10 %)
Discharge current	LiPo/LiIon/LiFe/ LiHV/NiMH/NiCd/Pb	0.1–0.2 A (±0.1 A) 0.3–2 A (±10 %)
Balance current	LiPo/LiIon/LiFe/LiHV	max. 1000 mA
Trickle charge current	NiMH/NiCd	50–300 mA and OFF, default 60 mA

Item	Option	Specification
	LiPo/LiIon/LiFe/LiHV	1–6S
Battery types	NiMH/NiCd	1–15S
	Pb	3S/6S/12S
	LiPo/LiIon/LiFe/LiHV	Balance CHG, Charge, Discharge, Storage
Working modes	NiMH/NiCd	Charge, Discharge, Re-Peak, CYCLE_D_C, CYCLE_C_D
	Pb	Normal, AGM Charge, Cold Charge, Discharge
	voltage	2–30 V
	current	0.1–10 A (at 2–2.9 V) 0.1–12 A (at 3–30 V)
DC power supply	over-current protection	0.1 A (±0.1 A) 0.2–4 A (±20 %) 4.1–10 A (±10 %) 10.1–12 A (±5 %)
	power	AC input: max. 100 W DC input: max. 200 W
	voltage	1.0–12.0 V
	current	1.0–5.0 A
DC motor run-in	direction	FORWARD
	time	1–180 min
	motor stall protection, over-current protection	overload protection
Size	L × W × H	105 × 105 × 62 mm
Weight	net weight	approx. 340 g
Working environment	temperature	0–40 °C
	humidity	0–75 %
Storage environment	temperature	−10 °C to 70 °C
	humidity	0–75 %

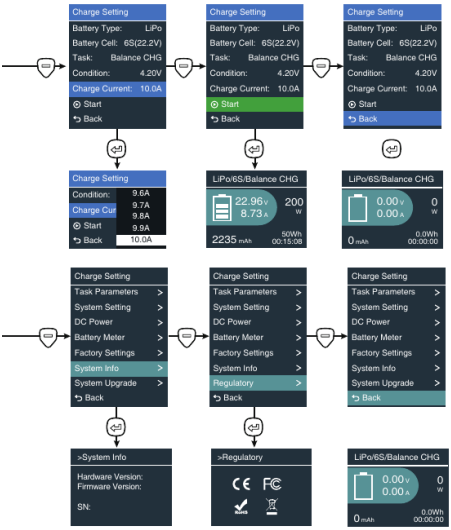
Manufacturer: SKYRC TECHNOLOGY CO., LTD., Floors 4,5,8, Building 4, Meitai Industrial Park, Guanguang Road, Guanlan, Longhua District, Shenzhen, 518110, China · www.skyrc.com · info@skyrc.com

2.4 Program flow chart

A short press of **ENTER** on the main screen opens the *Charge Setting* menu (top row), a long press opens the *System Setting* menu (bottom row). Press **+** on the main screen to display the individual cell voltages and press it again to display their internal resistance.



Menu structure – part 1



Menu structure – part 2 (continues to the right of part 1)

2.5 Conformity declaration

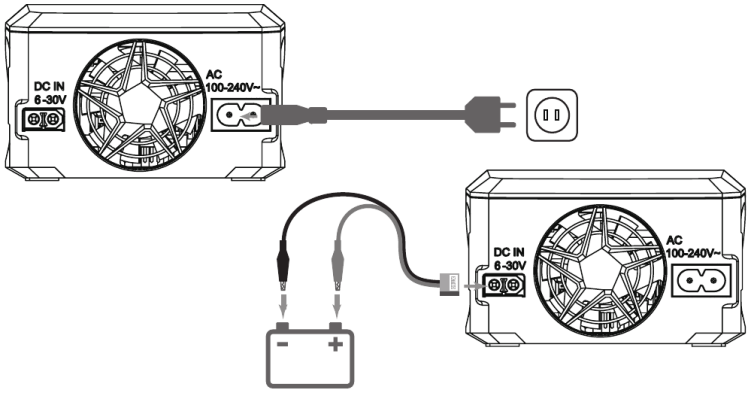
The manufacturer declares that the SkyRC S100neo satisfies all relevant and mandatory CE directives and FCC Part 15 Subpart B.

Standard	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 – Part 2-29: Particular requirements for battery chargers	conform
EN 55014-1	EMC – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission	conform
EN 55014-2	EMC – Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity	conform
EN 61000-3-2	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	EMC – Part 3-3: Limitation of voltage changes for equipment with rated current ≤ 16 A	conform
FCC Part 15 Subpart B	Title 47 Telecommunication – Part 15: Radio frequency devices – Subpart B: Unintentional radiators	conform

3. Power and battery connection

3.1 Connect to power source

There are two input options for the SkyRC S100neo: **AC 100–240 V** (power cord to input ⑩) or **DC 6–30 V** (12 V DC battery or 6–30 V DC power supply connected to input ⑧).



Top: AC mains power, bottom: 12 V DC battery or 6–30 V DC power supply

- With AC input, the charge power is max. 100 W; with DC input, max. 200 W.
- Never attach the charger to both an AC and a DC power source at the same time.

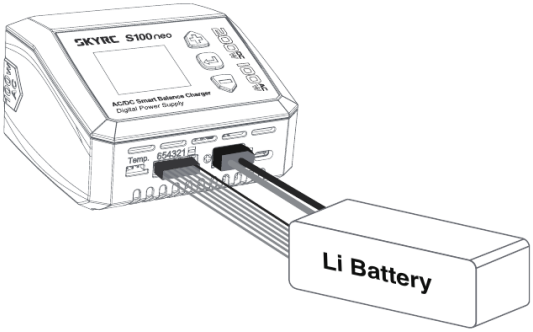
3.2 Connect the battery

To avoid short circuits, always connect the charge leads to the charger first and then to the battery. Reverse the sequence when disconnecting.

▶ 3.2.1 LiPo battery connection with balance adapter

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

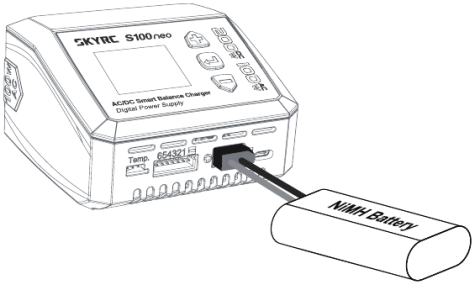
The battery balance connector must be connected to the charger with the black wire aligned with the negative marking (−). Ensure correct polarity!



Lithium battery connection – main and balance connector

▶ 3.2.2 NiMH/NiCd or Pb battery connection

NiMH, NiCd and lead-acid (Pb) batteries are connected to the main port only.



NiMH/NiCd or Pb battery connection

4. Charging

4.1 Working modes

Various operations are applicable depending on the battery type. The following table shows the operations relevant to the different battery types.

Battery type	Working mode	Description
	Balance CHG	Balance charges the lithium battery at the charging rate set by the user. It balances each cell of the battery.
LiPo LiIon LiFe LiHV	Charge	Charges the lithium battery at the selected charging rate.
	Storage	Prepares the battery for storage by charging or discharging it to a specific storage voltage.
	Discharge	Discharges the lithium battery at the selected discharging rate.
	Charge	Charges the NiMH/NiCd battery at the selected charging rate.
	Discharge	Discharges the NiMH/NiCd battery at the selected discharging rate.
NiMH NiCd	Re-Peak	The charger peak charges the battery twice in a row automatically. This is good for confirming the battery is fully charged.
	CYCLE_D_C	1 to 3 continuous discharge → charge cycles for refreshing and restoring the performance of NiMH/NiCd batteries.
	CYCLE_C_D	1 to 3 continuous charge → discharge cycles for refreshing and restoring the performance of NiMH/NiCd batteries.
	Normal	Charges the Pb battery at the selected charging rate.
	AGM Charge	Charges the AGM battery at the selected charging rate.
Pb	Cold Charge	Charges the Pb battery at low temperature at the selected charging rate.
	Discharge	Discharges the Pb battery at the selected discharging rate.

4.2 Lithium battery program (LiPo/LiIon/LiFe/LiHV)

Use the **−** (or **+**) button to move between items; press **ENTER** to open an item and confirm your choice.

① **Battery Type** – press **ENTER** to call out the battery type menu and select LiPo (or LiIon, LiFe, LiHV).

② **Battery Cell** – select the correct number of battery cells.

③ **Task** – select the desired working mode (Balance CHG, Charge, Storage, Discharge).

④ **Condition** – select the terminal charging voltage.

⑤ **Charge Current** – select the charge or discharge current.

⑥ **Start** – initiate the program.

⑦ **Back** – step back to the main screen.

Stop: press **ENTER** to stop the program. If prompted to stop, short-press **ENTER** again to confirm, or short-press **−** to return.

4.3 NiMH/NiCd battery program

Use the **−** (or **+**) button to move between items; press **ENTER** to open an item and confirm your choice.

① **Battery Type** – press **ENTER** to call out the battery type menu and select NiMH (or NiCd).

② **Battery Cell** – select the correct number of battery cells.

③ **Task** – select the desired working mode (Charge, Re-Peak, CYCLE_C_D, CYCLE_D_C, Discharge).

④ **Condition** – set the delta voltage (delta peak sensitivity) in mV.

⑤ **Charge Current** – select the charge or discharge current.

⑥ **Temp. Cut-off** – select the temperature at which the program ends.

⑦ **Start** – initiate the program.

⑧ **Back** – step back to the main screen.

Stop: press **ENTER** to stop the program. If prompted to stop, short-press **ENTER** again to confirm, or short-press **−** to return.

4.4 Pb lead-acid battery program

Use the **−** (or **+**) button to move between items; press **ENTER** to open an item and confirm your choice.

① **Battery Type** – press **ENTER** to call out the battery type menu and select PB.

② **Battery Cell** – select the correct number of battery cells.

③ **Task** – select the desired working mode (Normal, AGM Charge, Cold Charge, Discharge).

④ **Charge Current** – select the charge or discharge current.

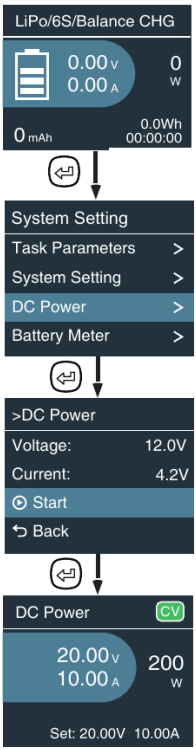
⑤ **Start** – initiate the program.

⑥ **Back** – step back to the main screen.

Stop: press **ENTER** to stop the program. If prompted to stop, short-press **ENTER** again to confirm, or short-press **−** to return.

5. Additional functions

5.1 DC power supply (DC Power)



① On the main screen, hold the **ENTER** button for two seconds to enter the *System Setting* menu. Select *DC Power*.

② Adjust the output voltage (*Voltage*) and current (*Current*).

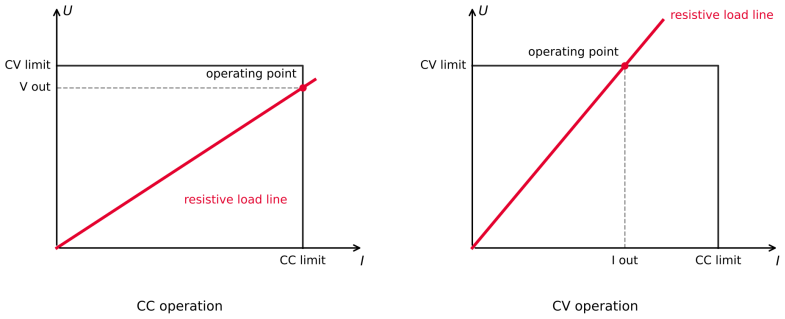
③ Select *Start* to activate the DC power working mode and then connect your desired DC equipment to the main port.

In DC power mode, the display shows the actual output voltage, current and power, the set values and the current regulation mode (CV or CC).

5.2 Constant voltage (CV) and constant current (CC) mode

When acting as a digital power supply, S100neo regulates either its output voltage or its output current at a constant level. Constant current (CC) mode and constant voltage (CV) mode switch automatically as follows:

- if $R_{load} > (V_{out} / I_{out})$, the power supply is in CV mode,
- if $R_{load} < (V_{out} / I_{out})$, the power supply is in CC mode.



Power supply I-V diagram

▶ **Benefits of a CC/CV power supply**

- **Versatility** – switching between constant current and constant voltage makes it suitable for a wide range of applications, from powering delicate electronics to driving high-power devices.
- **Protection** – in CC mode the power supply never delivers more current than the set limit the device can safely handle. This prevents overcurrent situations that could damage the device or create hazards.
- **Battery charging** – lithium batteries require a precise charging protocol: first CC mode restores most of the capacity, then CV mode tops off the charge while preventing overcharging.
- **Optimized for various loads** – some loads require a specific voltage to operate correctly, others a particular current. A CC/CV supply provides a stable and suitable output under various load conditions.
- **Improved efficiency** – dynamically switching modes depending on the load often allows more efficient operation than a supply using only one mode.
- **Safe for LED driving** – LEDs are current-driven devices and a slight increase in voltage can lead to a high current that damages them. CC mode allows safe driving of LEDs; CV mode is useful for LEDs configured in parallel strings.

5.3 DC motor run-in (Motor Run-In)

① Connect the motor to the main port.

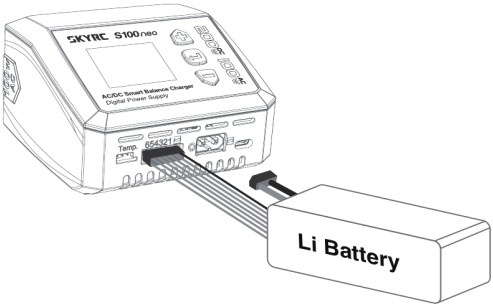
② On the main screen, hold the **ENTER** button for two seconds and select *System Setting → DC Motor Run-In*.

③ Select the voltage, current and timer.

④ Press **ENTER** to start.

5.4 Battery voltage meter

S100neo measures the lithium battery voltage easily and conveniently. Use the balance port to connect the lithium battery directly to S100neo. S100neo lights up and displays the battery voltage without power on.



Voltage measurement – battery connected by the balance connector only

5.5 Battery resistance meter

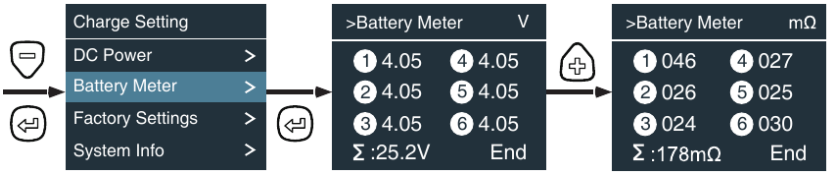
① Power on S100neo and hold the **ENTER** button to enter the *System Setting* menu.

② Connect the battery to S100neo and scroll down to *Battery Meter*.

③ Press **ENTER** to measure the battery voltage and resistance.

④ Press **+** to check the resistance values.

⑤ Press **−** to exit the *Battery Meter* screen.

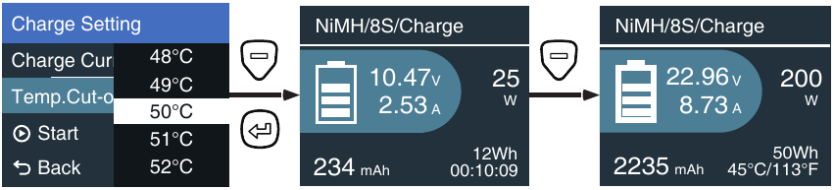


5.6 Battery temperature test

① Power on S100neo and select the NiMH/NiCd charging program.

② Connect the temperature sensor and the NiMH/NiCd battery.

③ Press − to show the battery temperature.



5.7 Voltage calibration (for expert users only)

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

5.8 Firmware upgrade

① Download the latest **Charger Master** onto your computer. Unzip and open it.

② Connect S100neo to your computer via a USB Type-C cable.

③ Launch Charger Master, which will detect the charger automatically.

④ After successful detection, click to check for a new firmware version.

⑤ When there is a new version, click to upgrade and wait until the process finishes.

6. Settings

6.1 Charge settings (Charge Setting)

Short-press the **ENTER** button on the main screen to enter the *Charge Setting* menu.

Menu	Definition
Battery Type	Select the desired battery type (LiPo, LiIon, LiFe, LiHV, NiMH, NiCd, PB).
Battery Cell	Select the number of battery cells by battery type (lithium: 1–6S, NiMH/NiCd: 1–15S, Pb: 3S/6S/12S).
Task	Select the working 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 screen.

6.2 System settings (System Setting)

On the main screen, hold the **ENTER** button for two seconds to enter the *System Setting* menu.

Menu	Option	Definition
	Safety Timer	Customize a time period for program protection.
	Max. Capacity	Customize the maximum capacity.
Task Parameters	Trickle Charge	Enable/disable trickle charge.
	Holding Voltage	Enable/disable holding voltage. If enabled and the battery voltage drops to a specified value, the charger automatically charges the battery with a small current.
	Back	Back to the previous menu.

Menu	Option	Definition
	Language	Select the system language.
	Min. Input Voltage	Set the minimum voltage for input protection.
	LCD BackLight	Adjust the brightness of the screen.
System Setting	Volume	Adjust the volume of the keys and beep.
	Completion Signal	Choose how you would like to be notified when the program completes.
	Warning	Enable/disable the start-up warning.
	Back	Back to the previous menu.
DC Power	Voltage	Set the output voltage (2.0–30.0 V).
	Current	Set the output current (1.0–12.0 A).
	Start	Enable the DC power output and return to the main screen.
	Back	Back to the previous menu.
Battery Meter	–	Measure the battery voltage and internal resistance. Press − to return to System Setting.
Factory Settings	–	Restore the factory settings.
System Info	–	Check the current system status (hardware and firmware version, serial number).
Regulatory	–	Check the certification information.
Back	–	Back to the previous menu.

7. Errors and warnings

In the event of a fault, the charger displays an error message and sounds an alarm.

Error message	Explanation
DC In Too Low	The DC input voltage is lower than the preset value or the minimum input voltage (Min. Input Voltage).
DC In Too High	The DC input voltage is higher than the preset value.
Connection Break	The battery connection is broken.
Overcharge Capacity Limit	The charged capacity exceeds the limit.
Over Time Limit	The program has timed out.
Int. Temp Too High	The internal temperature is too high.
Over Load	The charger is overloaded.
Reversed Polarity	The battery is connected with reversed polarity.
Fully Charged	The battery is already fully charged.
Outlet Overload	The output is overloaded.
Balance Connection Error	The balance connection is incorrect.
Battery Type Error	The cells do not match.
Cell Error	The selected battery type is wrong.
Cell Volt Diff.	The voltage difference between the cells is too high.

8. Information for the EU and Czech Market

8.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.cz

8.2 Product conformity

CE

- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorama.cz.
- **Product identification:** the type designation (S100neo) is given on the device; the serial number and the firmware version can be found in the *System Setting* → *System Info* menu.

8.3 Disposal of electrical equipment



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu.

9. Warranty and rights arising from defective performance

9.1 Rights of the buyer under Czech law

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection. The manufacturer's warranty terms set out below (Chapter 9.2) **do not in any way limit** the buyer's rights arising from these regulations.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 8.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.

9.2 Manufacturer's warranty terms

※ The following text is the manufacturer's original warranty statement.

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 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 failure to observe the procedures outlined in this manual.

Liability exclusion

- This charger is designed and approved exclusively for use with the types of battery stated in this 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 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.
- The manufacturer's warranty service is valid in China only. If you need warranty service outside China, please contact your dealer in the first instance, who is responsible for processing guarantee claims. Due to high shipping costs and complicated customs clearance procedures, SkyRC cannot provide warranty service to end users outside China directly.