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H-SPEED HSP0016 Herakles NEO AC/DC Dual Charger Instruction Manual

Home » H-SPEED » H-SPEED HSP0016 Herakles NEO AC/DC Dual Charger Instruction Manual

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Contents hide

1 INTRODUCTION 2 WARNINGS AND SAFETY NOTES 3 PRODUCT PARAMETERS AND CHARACTERISTICS 4 STANDARD BATTERY PARAMETERS **5 CONFIRMING CHARGE CURRENT** 6 TASK SETTINGS 7 CONFIRMING CHARGE CURRENT **8 WORKING PARAMETERS DISPLAY** 9 SYSTEM SETTINGS MENU **10 SYSTEM SETTINGS MENU 11 EXTERNAL DISCHARGE FUNCTION 12 MOTOR TESTING FUNCTION 13 SERVO TESTING FUNCTION 14 WIRELESS CHARGING FUNCTION** 15 WARNINGS AND ERROR MESSAGES **16 WARRANTY AND SERVICE 17 CONFORMITY DECLARATION** 18 Documents / Resources 18.1 References 19 Related Posts

INTRODUCTION

Thank you for your purchase of H-SPEED HERAKLES NEO Dual Channel AC/DC Balance Charger. This product is a rapid charger with a high performance microprocessor and specialized operating software.

Please read this entire instruction manual completely and attentively before using this product, as it covers a wide range of information on operation and safety.

WARNINGS AND SAFETY NOTES

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE USING THE PRODUCT!

The following warnings and safety notes are for your protection, please refer to all aspects of this instruction manual to ensure proper operation. FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS MAY CAUSE FIRE, PROPERTY DAMAGE AND/OR PERSONAL INJURY!

- WARNING:
 - To reduce the risk of fire, electrical shock or injury to persons or property:
- For indoor use
- Disconnect the supply before making or breaking the connections to the battery.
- Provide adequate ventilation during charging.
- WARNING:
 - Against recharging of non-rechargeable batteries.

- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- The charger's intended to charge the following battery types: LiPo, LiHV, LiIon, LiFe, NiMH, NiCd, Pb battery only.

Number of batteries: Two Packs

MAX Battery rated capacity: 50000mAh

- NEVER leave the battery or charger unattended while in use. In case of any malfunction, immediately disconnect charger from electric supply and refer to this manual for
- troubleshooting ideas
- ALWAYS keep your charger away from dust, dirt, moisture, rain, and high temperature. Avoid leaving your charger or battery in direct sunlight or exposing them to intense vibration or shock.
- ALWAYS make certain to observe proper input and output polarity. The HERAKLES NEO operates safely with input voltage between AC 100-120V or 220-240V, DC 9-32V.

- ALWAYS place the charger on a heat-resistant, non-flammable surface when in use. Keep flammable materials away from charger when in use.
- NEVER use the charger while placed on automobile seats, carpeting, or other flammable materials.
- ALWAYS make sure that the vent holes on the bottom of the charger are unobstructed and the cooling fan is in operation.
- ALWAYS fully read all warnings and instructions on both charger and battery prior to use. Be aware of battery safety warnings. Make sure that all charging parameters are correctly setup prior to charging any battery. INCORRECT SETTINGS MAY CAUSE FIRE, PROPERTY DAMAGE AND/OR PERSONAL INJURY!
- ALWAYS press the roller wheel to terminate charge completely when battery is fully charged, and return to the standby screen on the LCD display.

PRODUCT PARAMETERS AND CHARACTERISTICS





STANDARD BATTERY PARAMETERS

	NiCd/NiMH	Pb	LiFe	Lilon	LiPo	LiHV
Rated Voltage	1.20V	2.0V	3.2V	3.6V	3.7V	3.8V
Full Charge Voltage	1.4V	2.4V	3.6V	4.1V	4.2V	4.35V
Storage Voltage	-	-	3.3V	3.7V	3.8V	3.9V
Discharge Voltage	0.5-1.10V	1.8-2.0V	2.6-2.9V	2.9-3.2V	3.0-3.30V	3.1-3.4V
Pre-charge Voltage	_	2.0V	2.9V	3.1V	3.2V	3.2V
Balance Charge	_	-	1	1	1	1
Unbalanced Charge	1	1	1	1	1	1
Support Cells	1-16s	1-12s	1-6s	1-6s	1-6s	1-6s
Max Charge Current	16A	16A	16A	16A	16A	16A

Be EXTREMELY careful to choose the correct voltage settings based on the cells and chemistry of the battery being charged. Failure to do so may result in battery damage, explosion, or fire!

CONFIRMING CHARGE CURRENT

It is critically important to understand the maximum charging current for the battery pack to be charged. Excessive charge current can significantly reduce the life of a battery, or in severe cases a fire or explosion.

The charge and discharge current of a lithium battery is determined by its "C" rating. Most batteries indicate the C rating of the pack on the main label. Multiply the C rating of the battery pack by the capacity to determine the safe and proper charge current. For example, a 1000mAh battery with a 5C rating means that the maximum charge rate should be 1000 (capacity in milliamps) X 5 (C rating) = 5,000mAh. Therefore, the maximum charge rate for a 1000mAh 5C lithium battery should be 5A (5,000mAh).

If it is not possible to determine the C rating, please assume that the pack is 1C and use that value to calculate a safe charge rate. Keep in mind that batteries vary, and therefore charging times will vary.

TASK SETTINGS

Power on the charger and connect a battery, the charger will enter into the standby page, then short press the roller wheel to activate the program setting menu. The items in the menu are as follows:

Battery	Select battery chemistry
Cells	Select number of battery pack cells
Mode	Work mode: Charge / Discharge / Storage / Ext.DISC
Current	Select desired charge current (0.1-16.0A), discharge current (0.1-3.0A)/Ext.discharge(0.1-15.0A)
TVC	Terminal voltage control
Start	Begin process
Back	Return to previous screen or function

The default mode of the HERAKLES NEO is series charging, therefore you must connect the output wires to the battery pack that you wish to charge. For lithium packs, it is highly recommended to ALWAYS connect the balance leads and utilize balance charging. Although the HERAKLES NEO will charge without the balance function, a warning tone will sound to alert you that the balance connector is not in use.

Storage

When selecting the storage function, the HERAKLES NEO will automatically begin charging if the battery pack voltage is below the ideal storage voltage. Likewise, the HERAKLES NEO will automatically enter the discharge mode if the battery pack voltage is higher than the ideal storage voltage. • Restoring an excessively discharged lithium battery pack

If the HERAKLES NEO detects internal cell voltages that are too low to safely begin the charging process, it will automatically default to a 0.1A charge rate until the voltage has risen to a level that allows it to safely accept a fast charge rate.

CONFIRMING CHARGE CURRENT

• Measuring Internal Resistance

The HERAKLES NEO features the ability to monitor the internal resistance of each cell in a lithium battery pack. This feature is only operational when in the balance charging mode. Internal resistance can be use ful to determine the overall "health" and performance of a lithium battery, the closer the IR values are between the cells in the battery pack, the better that the battery will deliver its energy.

NOTE: The process of charging a lithium battery is dynamic, therefore you will notice fluctuations in both charge current and IR during the charging process.

WORKING PARAMETERS DISPLAY



Rotating the roller wheel up or down during charging will switch the information displayed on the lower half of the LCD screen between cell voltage, cell IR and working parameters. Cell voltage and IR can only be displayed during the balance charging process.

SYSTEM SETTINGS MENU

Long press the CH1 roller wheel to activate the system default menu.

Language	English, German, French, Simplified Chinese, Trad. Chinese	
MAX Input Power	Adjustable from 100W-700W (if use DC input source)	
MIN Input Voltage	Adjustable from 9V-24V (if use DC input source)	
Power Distribution	Support power distribution	
Capacity Cut	Terminates charge process when reach this value Maximum capacity can be adjusted by user	
Time Cut	Terminates charge process when exceeding time set by user	
Temperature Cut	Battery temperature protection (external temperature cable is required)	
Backlight	Three options-High, Medium, Low	
Volume	Four options- High, Medium, Low and Off	
Servo Pulse Period	Servo PWM signal period	
Servo Pulse Step	Servo PWM signal pulse width increment	
About	Software version and information	
Factory Reset	Returns all settings to factory default values	
Back	Return to last program or menu	

Max Input Power: When the input power can not reach the charger's maximum working power requirement (700W), to ensure stable and safe operation of the HERAKLES NEO, this value should be adjusted according to the input power source used for the charger. For example, when using a 20V/20A DC power supply, this value should be set to 400W (P=U X I).

Min Input Power: When the user takes a battery as the input power source, this setting can protect the battery from being over-discharged. When the charger detects an input voltage lower than the setting value, then the charger will stop the current task and remind the user with showing" DC IN TOO LOW". For example, when using a 6S LiPo as a power source, we can set this value at 21.0V to protect the battery from being overdischarged.

SYSTEM SETTINGS MENU

Volume: When setting the buzzer volume to OFF, the operation sound will be shielded, but the error sound will not be shielded.

Power distribution: The total AC input power is 300W, the default power for each channel is 150W. The user can adjust the power for CH1 and CH2, the total power CH1+CH2=300W.

EXTERNAL DISCHARGE FUNCTION



HERAKLES NEO increases the function of external discharge to meet the users' demand for high-power discharging of batteries, HERAKLES NEO connected to an external discharger UP-D200 can achieve 200W discharge power, greatly improving the battery discharge speed and saving time. Meanwhile, compared with the traditional discharger, the HERAKLES NEO has a balancing discharge function, which can effectively avoid single cell overdischarge, which will be safer safely and more reliable.

MOTOR TESTING FUNCTION



Motor Testing: Adjust the pulse width value of the ESC control signal, in order to adjust the Motor's RPM value. According to RPM value and KV value to detect if the motor works well.

SERVO TESTING FUNCTION



Servo testing: By adjusting and changing the pulse width, it can be detected if the servo's direction and angle are normal.

WIRELESS CHARGING FUNCTION



Supporting Mobile Phones: iPhone X iPhone XS Samsung S8 Huawei P30 Pro Xiaomi 9 etc.

WARNINGS AND ERROR MESSAGES



- Error Message for Abnormal Battery Connection
- Unplug and re-connect all plugs to ensure proper connection and polarity. Check to make sure that all connectors are free of dirt, grease, or oxidation. • Error Message for Unstable Input Voltage
- Make certain that the battery socket is free from dirt or oxidation. Make sure that the Max Input Voltage is set correctly in the System menu.

WARRANTY AND SERVICE

HOECO Handels GmbH complies with the mandatory warranty laws. This limited warranty does not cover defects which are a result of normal wear, misuse or improper maintenance. Because we are not able to control the correct installation or operation of this product, we can't accept any liability for any damages resulting from using this product. Any operation of this product is at your own risk. By installing or operating this product the user accepts all resulting liability.

CONFORMITY DECLARATION

Hereby Ultrapower Technology Limited declares, that the charger H-SPEED HERAKLES NEO Model No. HSP0016 complies with directive 2014/35/EU as well as directive 2014/30/EU.

The full document can be found under: https://www.hoeco.at/download/Doc-from-Ultra-Power.pdf





HOECO Handels GmbH Fischagasse 44, 2483 Ebreichsdorf, Austria Tel.: +43 (0) 2254-72031-0, Fax: +43 (0) 2254-72031-9 Email: office-mb@hoeco.at www.hoeco.at · www.h-speed.at

> Manufactured by Ultra Power Technology Limited Made in China



Documents / Resources



H-SPEED HSP0016 Herakles NEO AC/DC Dual Charger [pdf] Instruction Manual HSP0016, Herakles NEO AC DC Dual Charger

References

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