

Warranties and complaints

The Redox Alpha V2 product is covered by a 2-year manufacturer's warranty . If a problem occurs with the device, first contact the store **where the product was purchased**, presenting proof of purchase.

The warranty does not apply in the event of improper handling of the charger, e.g. improper use , charging of other approved types of batteries, incorrect polarity, unauthorized interference in the device's electronics , obvious negligence or serious contamination of the product, mechanical damage, storage in a unfavorable conditions (e.g. high humidity conducive to corrosion), getting wet, causing a short circuit, overcharging the pack due to setting incorrect charging parameters and others that are not directly attributable to the manufacturer.

Moreover, the Guarantor is not liable for any damage or loss caused as a result of using the product.



α ALPHA^{V2}
6 CELL DIGITAL BALANCE CHARGER
INSTRUKCJA OBSŁUGI



Thank you for purchasing the Alpha V2 charger from Redox. This charger has the ability to quickly charge various types of packages, it is equipped with a cell baler allowing for more accurate charging of lithium packages, as well as a high-performance microprocessor and specialized software. Please read the following instructions carefully , as they contain all information regarding operation and safety rules that should be followed when using the product.

Technical data:

Working voltage :

DC .1.0-18.0V Max.

Output power :

Charging power 50W Max.

Discharging power SW 0.1-5.0A 0.1-1.0A

300 mAh/

cell 1-15

cells

Number of supported NiCD/NiMH cells: "

1-6 cells

Number of supported Li-Po/Fe/Ion cells :

2-20v

Supported Pb batteries:

Net weight:

400 g

SPECIAL FEATURES

Optimized software The Alpha V2 charger is

equipped with a special AUTO function that enables automatic selection of currents during charging and discharging processes. This is a particularly useful function in the case of lithium packs, where incorrectly selected parameters may lead to the pack overloading or even exploding . If any irregularity is detected, the charger software automatically stops the charging process and informs us about it with an acoustic signal . All software settings can be modified by the charger user .

Internal, independent **Lithium cell balancer** The Alpha V2 charger is

equipped with an independent Lithium cell balancer. Thanks to this, we are not forced to connect a separate cell balancer to the charger .

Balancing pack cells during the discharge process During the discharge process, the

Alpha V2 charger can monitor and balance the voltage of individual pack cells. If the charger detects any irregularities in the voltage of any of the cells, the discharging process will be interrupted and information about the error will be immediately displayed .

Compatibility **with Lithium packs** The charger is

compatible with the most popular types of lithium packs, such as Lithium-Polymer (LiPo), Lithium-Ion (Lilon) and Lithium-Iron (LiFe).

Lithium pack charging modes Depending on

our needs, we can choose a specific lithium pack charging mode . Mode

fast (FAST) reduces the loading time to a minimum and loads the package to its current capacity. STORAGE mode is used when we want to leave the device unused - ny for a longer period of time. In this mode, the charger supplies the final voltages of the individual cells of the pack and the appropriate level of its charge.

MAXIMUM SAFETY

Possibility to adjust the Delta-Peak parameter for nickel packages with automatic cut-off function . When the pack voltage drops below a set threshold, the process will be automatically interrupted.

Setting the upper limit of the charging current in AUT mode? .

It is possible to set an upper limit on the charging current for N1CD and NiMH packs. This function is extremely useful when charging nickel cells with low resistance and capacity in AUTO mode.

Capacity limit It is possible to set the maximum capacity , calculated in milliamps, above which the charger stops the charging process.

Temperature

threshold The chemical processes that take place inside the panel during charging cause it to begin to heat up. If the temperature reaches a previously set limit, the process will be automatically interrupted. *This function is possible when an optional temperature sensor is connected , which is not included in the set.

Time limit

The software allows you to set the maximum operating time of the charger, thanks to which we can avoid possible damage to the package.

The charger has a built-in memory for up to 5 packages. Information about these packages is kept for your convenience .

Cyclic charging/discharging

The charger has the ability to cycle packages (up to 5 cycles) useful in forming nickel batteries, or stimulating their operating parameters after a long time of storage.

Please read the following notes regarding use of the charger carefully . Failure to follow the recommendations contained in this manual may result in serious consequences , both for the equipment and the health of the operator.

1. Never leave the charger unattended while it is in operation .
2. If any mechanical damage or defect is detected in the charger - do not connect it to the power supply ! (consult your dealer in this situation)
3. When using the charger, please avoid dirt, dust , moisture (rain, snow, dew, etc.), excessive heat and severe frost, direct strong sunlight and vibration. All these factors adversely affect the charging process and in special cases may cause damage to the equipment or other dangerous unforeseen consequences.

4. The allowable voltage for the charger is 11 -18 V ~C. Too high a value may cause damage to the charger, while if it is too low, other, unforeseen consequences may occur .

5. Make sure you know all the battery11 charging current parameters and that they are within the limits supported by the charger. 6. When charging or discharging a given battery, always make sure that the battery setting is set appropriately for its type. Setting the charging mode for a different battery type than the one connected to the charger may result in serious consequences,

permanent damage to the battery and charger , including. .

7. Warranty provided by the manufacturer in the event of mechanical damage to the charger and damage resulting from its incorrect operation 1.

Specification of batteries charged by the Redox Alpha V2 charger

NiCD/NiMH - 1.2 V/ cell

Recommended charging currents : 1 C - 2 C (depending on cell efficiency or product indications)

Threshold voltage when discharging: ?8~ V/ cell for N1CD and 1.0 V/ cell for N1M~ when reaching the lower threshold voltage, y~~~~:-! " ~~~~~ ~1~ .. ~.??~::~discharging.

- 3.6V/ cell
Maximum charging voltage : 4.1 V/ cell Recommended
charging current : 1 C or less Discharge threshold
voltage : 2.5 V /cell or higher .

When the lower threshold voltage is reached , the charger will stop the discharging process.

Maximum charging voltage : 4.2 V / cell Recommended
charging current : 1C or less (unless the manufacturer allows other values)
Discharging threshold voltage : 3.0 V/ cell or higher. When the lower threshold
voltage is reached , the charger will stop the discharging process.

Li-Fe - 3.3 V / cell

Maximum charging voltage : 3.6 V / cell Recommended
charging current : 4C or less Threshold voltage
when discharging: 2.0 V / cell or higher When the lower threshold voltage is reached ,
the charger will stop the discharging process .

Pb - 2.0 V/ cell

Maximum charging voltage : 2.46 V/ cell Recommended
charging current : 0.4C or less Threshold voltage
when discharging: 1.75 V/ cell or higher When the lower threshold voltage is reached ,
the charger will stop the discharging process .

8. To avoid accidental polarity reversal when charging the pack, always connect the charger's power supply first , and only then the pack being charged . The charger will alert you about reverse polarity.

9. Do not connect more than one battery to the charger.
1 O. Never charge (or discharge) the following types of batteries: • Batteries that are already fully
charged or only slightly discharged (not applicable

• Packages consisting of several different types of cells (or from other manufacturers)

• Single- use, non- rechargeable batteries (danger of explosion!) • Batteries of a different type than those supported by the Redox Alpha charger (Li-Pol, Li-Ion, Li-Fe, NiCD, NiMH or Pb). • Damaged batteries or batteries with a damaged internal structure (defective) • Batteries with a built-in internal charging circuit or with a circuit protecting against charging with chargers other than those indicated by the manufacturer • Batteries installed in other devices that have an active connection with other electrical elements of the circuit.

11. Before connecting the battery to charge, make sure that : • Is the charger set to the program corresponding to the type of battery being charged ? • Is the set charging intensity appropriate for the type of battery? • Is the pack voltage selected correctly ? (Some packages are connected in series - check before connecting whether the output voltage of the pack is appropriate to that set in the charger) • Are all connections "secure"? Never connect the battery for charging to unstable or not fully contacted connectors .

- general information.

During the charging process, a certain amount of electricity is transferred to the battery pack. The amount of this energy (indicated on the display) is calculated based on the current supplied to the pack and the charger's operating time, in accordance with the program used for a given type of battery. The typical capacity of the battery being charged should be recorded by the manufacturer on its packaging~. Unless the battery packaging also contains information regarding the permissible maximum charging current , you should not

exceed their standardized values. ~disconnect the battery to the charger output terminal , remembering to keep it correct_p_polariz~~JJ: (+) is the positive pole, (-) is the negative pole. Due to the difference between the resistance of cables and connectors, the charger may often not correctly read the resistance of the supplied batteries. It is therefore important to use the smallest possible number of connections between the pack and the charger for charging , and that they are high-quality conductors (e.g. gold -plated banana and copper connectors, thick braided wires in a silicone sheath).

When preparing for charging and selecting a given program in the charger , always consult the manufacturer's instructions to find the recommended currents, temperature range or charging time. This applies especially to charged lithium-polymer batteries - in their case, incorrect setting of charging parameters may even result in battery damage! .

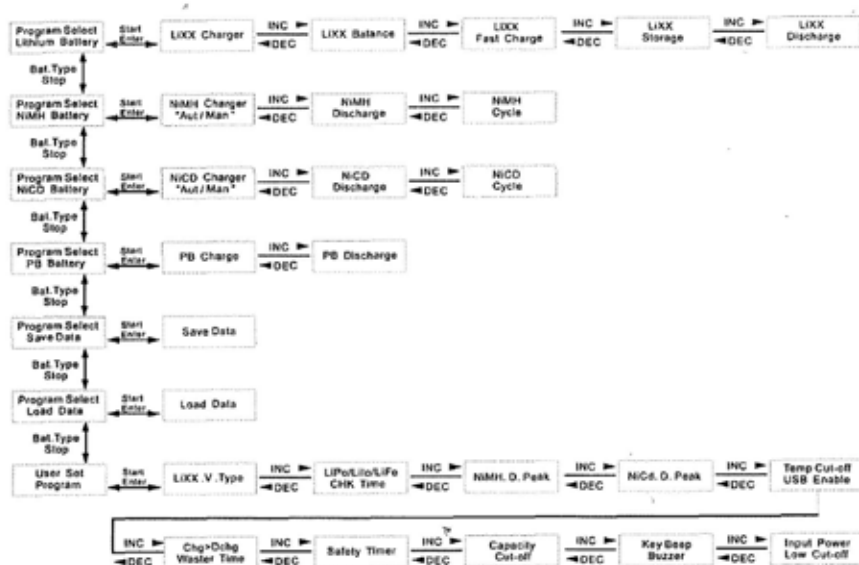
DISCHARGE general information

The purpose of battery discharge is to remove the electric charge remaining in the batteries or to reduce its voltage to a given level.

Similarly to the case of loading packages, in the case of unloading , special attention should be paid to the proper selection of the charger program and the preparation of the package. ~particular caution should be exercised when discharging lithium-polymer batteries - discharging below the lower threshold voltage may permanently damage the battery .

Some batteries have the so-called " memory effect " - this applies especially to N1CD batteries and _c~~sc10~0 ~1MH. In order to properly form the battery and maintain its capacity and power at the highest possible level, it is recommended to always completely discharge the N1CD and N1MH packages before each subsequent charging.

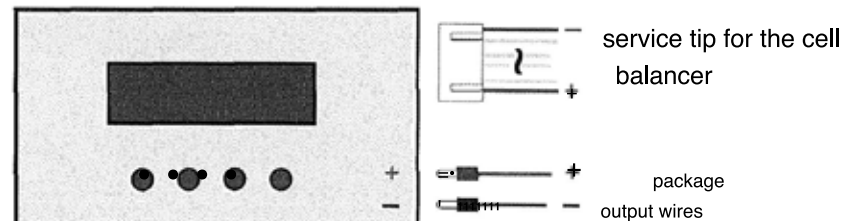
CHARGER SOFTWARE MAP



Charging **Lithium-Polymer batteries**

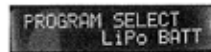
The function of charging lithium-polymer batteries (Li-POI) with the additional use of the built-in cell balancer will be described below. This charging method not only positively extends the battery life, but also allows for ongoing monitoring of the voltages applied to each cell during charging. In order for the selected program to be activated correctly, when charging starts, both output cables from the package (+) and (-) as well as the service terminal to the cell balancer must be connected to the charger (see the picture)

Connection **diagram for a lithium-polymer battery for charging in balancer mode** :



Charging Lithium Polymer Batteries

Use the **BATT TYPE/STOP** button to select the **lithium-polymer** battery program (**LiPo BATT**), and **confirm with the START /ENTER** button;



Use the **DEC/INC** buttons to select the program mode: **Charge:**

Battery charging mode **Balance:**

Battery charging mode using the built-in balancer **Fast Chg:**
Fast

battery charging mode using the built-in balancer (In this mode, charging takes less time than in the case of standard charging with using the balancer, but the battery will only be charged to approximately 95% of its capacity).

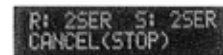
Storage: A mode for charging the battery to prepare it for



Discharge: Battery discharge mode

Using the **START/ENTER** buttons you can change the charging parameters: Voltage of the charged pack [V] and charging current [A]. Changes are made using **the DEC/INC** buttons and the selection is confirmed again with the **STAR - T/ENTER** button.

After setting the parameters, start charging by holding 3 knot. **START/ENTER** button pressed .



Start/Enter
Enter



A control prompt will appear on the screen - "R:" means the number of cells of the connected package detected by the charger processor, and "S:" - by **quantity** the user on the previous screen. If both digits are the same - you can start charging by pressing the **START/ENTER** button. If both digits differ , it means that either the wrong number of cells was selected on the previous screen, or the package is excessively discharged and its recharging may be dangerous (so you should absolutely refrain from

Symbol of the battery being charged and the number of cells (Li2S = Lithium Battery, 2-cell)

Charging current . While charging the battery, it is possible to change this parameter (select the parameter using the **START/ENTER** key, and then use the **DEC/INC** keys to increase or decrease the intensity. Confirm the selection again with the **START/ENTER** key).

Current battery voltage - displayed in real time

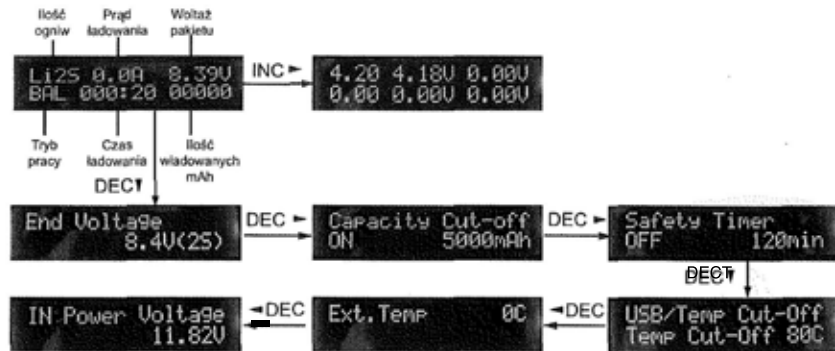
The number of mAh charged/discharged to/from the pack.

Charging/discharging time from start.

Charge/discharge mode (BAL = cell balancer charging mode)

Once the process is complete , the charger will display a charging/discharging report . This will be signaled by the **FULL / END** word **flashing** and a signal at the same time

Modified process parameters when charging lithium batteries using ba lan sera:
(description
of individual parameters on the next page).



During charging, the charger program allows you to view the pre- defined operating parameters of the device and view the current voltage on individual cells.
 Using the DEC/INC buttons, it will be possible to switch between subsequent screens with the following indications:

4.20 4.18V 0.00V
0.00 0.00V 0.00V

While the lithium pack is charged using the cell balancer, after pressing the LN button you will get a preview of the current voltage on individual cells.

End Voltage
8.4V(2S)

Pressing the **DEC** button once will display a screen indicating the target voltage

Capacity Cut-off
ON 5000mAh

Pressing the **DEC** button twice will display a screen showing the current settings for automatically stopping charging when the set capacity limit is reached .

Safety Timer
OFF 120min

Pressing the **DEC** button three times will display a screen showing the current settings for automatically stopping charging when the set time limit is reached .

USB/Temp Cut-Off
Temp Cut-Off 80C

Pressing the **DEC** button four times will display a screen showing the current settings for automatically stopping charging when the set temperature limit is reached .

Ext. Temp 0C

Pressing the **DEC** button five times will display a screen showing the current temperature using an external temperature sensor.

IN Power Voltage
11.82V

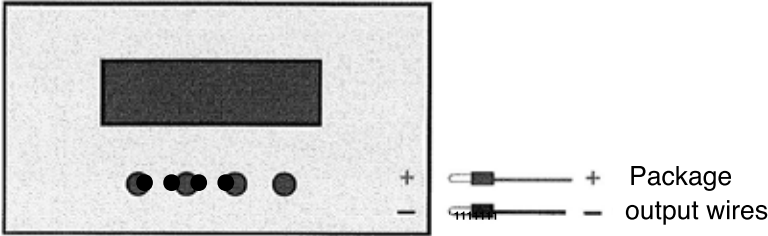
Pressing the **DEC** button six times will display a screen indicating the current voltage at the charger input .

Pressing the DEC button seven times will return you to the charging base screen.

Charging Nickel-Cadmium (NiCd) batteries and Nickel Metal Hydride (NiMH)

Battery connection diagram

Nickel plates for Redox Alpha charger :



PROGRAM SELECT
NiMH BATT

Start/Enter
Stop

NiMH CHARGE Man
CURRENT 0.1A

Start/Enter
(hold 3 seconds)

NiMH 0.1A 1.40V
CHG 000:11 00000

Using the **BATT TYPE/STOP** button, we select the battery program appropriate for the given type of nickel batteries (NiCd/NiMH), and confirm with the **START/ENTER** button.

Use the **DEC/INC** buttons to select the program mode:

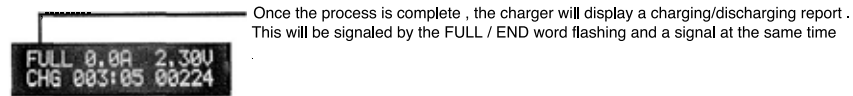
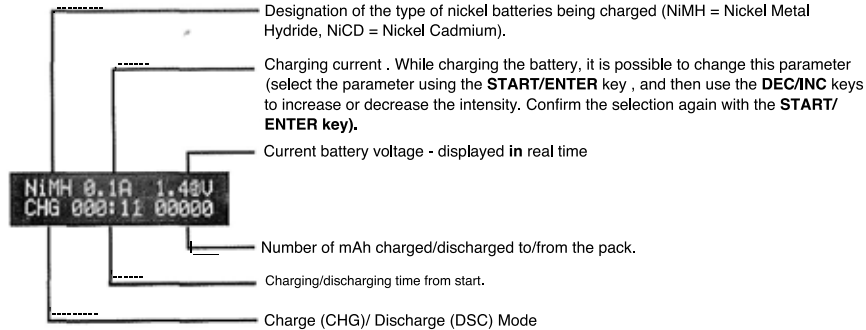
Charge: Battery charging mode .

Discharge: Battery discharging mode .

Cycle: Nickel battery cycling mode

Using the **START/ENTER** button and then the **DEC/INC** buttons you can change the charging current (from 0.1 to 5.0 A) .

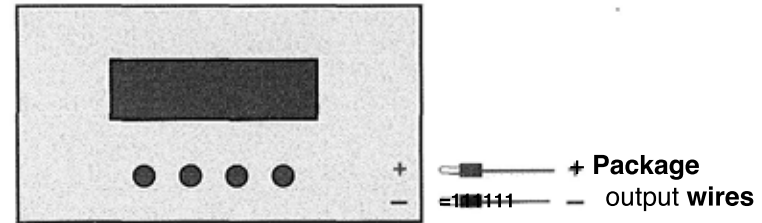
After setting the parameters, start loading for 3 seconds. **START/ENTER** button pressed .



Charging gel **batteries** (lead-acid **Pb batteries**)

Battery connection **diagram**

gel for **Redox Alpha** charger :



PROGRAM SELECT
Pb BATT

Bat. Type ↑
Stop ↓ Start/Enter

Pb CHARGE
4.1A 12.00(6P)

Start/Enter
(przytrzymaj > 3 sekundy)

Pb-6 4.0A 12.75U
CHG 000:00 00007

Use the **BATT TYPE/STOP** button to select the lead battery program (Pb BATT) and confirm with the **START / ENTER** button.

Use the **DEC/INC** buttons to select the program mode:

Charge: Battery charging mode .

Discharge: Battery discharging mode .

Using the **START/ENTER** button and then the **DEC/INC** buttons you can change the charging current (from 0.1 to 5.0 A).

After setting the parameters, start charging for 3 seconds. **START/ENTER** button pressed .

Pb-6 4.0A 12.75U
CHG 000:00 00007

Designation of the type of battery being charged (Pb =

Charging current . While charging the battery, it is possible to change this parameter (select the parameter using the **START/ENTER** key , and then use the **DEC/INC** keys to increase or decrease the intensity. Confirm the selection again with the **START/ENTER** key).

Current battery voltage - displayed in real time

The number of mAh charged/discharged to/from the pack.

Charging/discharging time from start.

Charge (CHG)/ Discharge (DSC) Mode

FULL 0.0A 2.30U
CHG 003:05 00224

Once the process is complete , the charger will display a charging/discharging report . This will be signaled by the **FULL / END** word flashing and a signal at the same time

Program for saving and reading saved charging settings

The charger has the ability to save settings (max. 5), making it easier to use the device later .

Once saved, the charging/discharging settings can be read very quickly , thus shortening the time needed to set all parameters and avoiding possible

PROGRAM SELECT
SAVE DATA

Bat. Type
Stop ▲ ▼ Start/Enter

Use the **BATT TYPE/STOP** button to select the SAVE DATA option **and** confirm your selection with the **START/ENTER** button.

Number of the memorized program (maximum 5 settings can be memorized)

SAVE [01] LiPo
3.7V 5000mAh

Battery type (for example, LiPo = Lithium Polymer battery)

Capacity of the charged battery

Voltage of the battery in use

Bat. Type
Stop ▲ | ▼ Start/Enter
(przytrzymaj > 3 sekundy)

LiPo CHARGE *
5.0A 11.1V(3S)

Using the **DEC/INC** buttons you can change the charger's operating mode . We select the option and then confirm it with the **START/ENTER** key .

Once the settings are selected , save the program to memory by holding the **START/ENTER** key for 3 seconds .

Program for saving and reading saved charging settings

Loading previously saved settings

PROGRAM SELECT
LOAD DATA

Bat. Type
Stop ▲ ▼ Start/Enter

Use the **BATT TYPE/STOP** button to select the **LOAD DATA** option and confirm your selection with the **START/ENTER** button.

Number of the loaded program (from 1 to 5)

LOAD [01] LiPo
11.1V 2200mAh

Battery type (for example, LiPo = Lithium Polymer battery)

Capacity of the charged battery

Voltage of the battery in use

Bat. Type
Stop ▲ | ▼ Start/Enter
(przytrzymaj > 3 sekundy)

After selecting the loaded program, press the **START/ENTER** key for 3 seconds to invoke it.

LiPo BALANCE
2.3A 7.4V(2S)

At this point, you **will** be able to modify the charger's operating mode .
We select the option and then confirm it with the **START/ENTER** key .

Once the settings are selected , start charging by holding the **START/ENTER** key for 3 seconds . The charger **will** start working according to. indicated program.