Cod. 90010303

DoubleVoltage
5V - 7.4V 20A+20A

USAGE MANUAL V1.3

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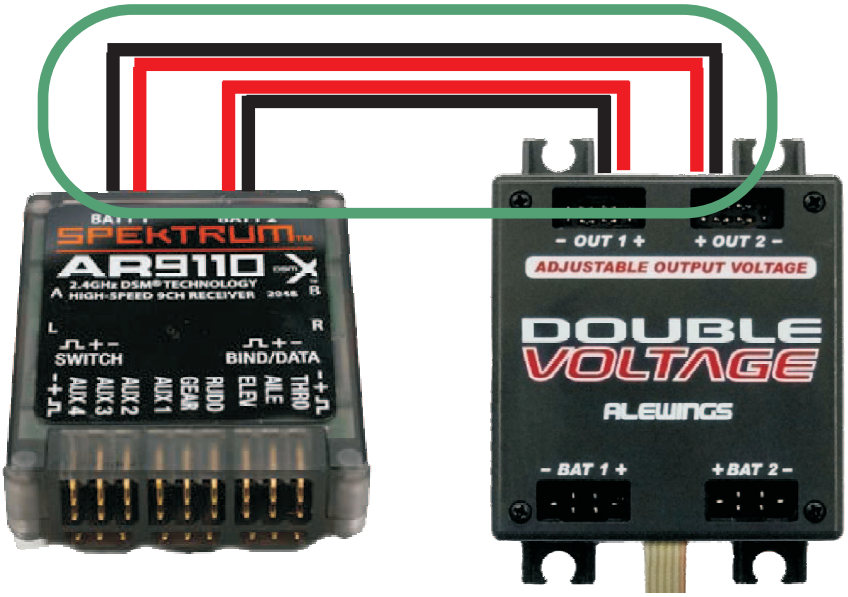
Dear Customer,
Thank you for purchaising an Alewings product.
The Double Voltage unit is a device for managing a double battery power supply with redundancy.
It accepts in input two 2S LiPoli 7,4V batteries and has two independent stabilized outputs that can be set by the user from 5V to 7,4V (it is ideal also for applications with HV servos).
Voltage is regualted in linear way simply rotanting the selectors on the device with a little screw driver. The Double Voltage id equipped with two voltage regulators, a double electronic switch controlled by button and an external panel
with LEDs indicating the battery status and system keeping memory of the lowest voltage.

The Double Voltage has been designed as a system providing redundant power supply to two inputs receivers (Figure 1) or for power supplying with only two batteries receiver, servos and electronic ignition of gas engine (Figure 2). It can also be used in combiantion with Alewings units managing servos, such as MAC16 and UniServo (Figure 3). It comes with 300mm flat cable and external panel. Battery inputs and outputs have MPX connectors.

PICTURE 1

REDUNDANT POWER SUPPLY



How to use the Double Voltage for power supplying a two inputs receiver.

The voltqge of the two outputs "OUT1" and "OUT2" can be regulated from a minimum of 5V to a maximum of 7,4V.

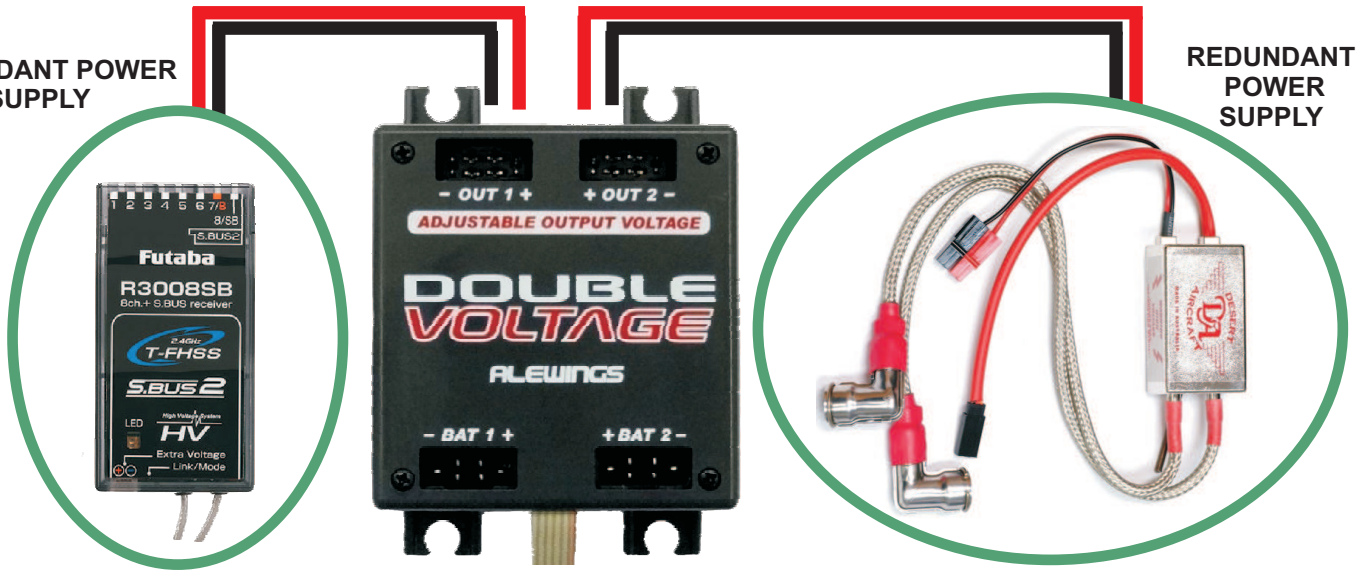
Maximum peak current for each output is 20A.

ATTENTION: BEFORE CONNECTING THE DOUBLE VOLTAGE TO ANY OTHER DEVICE, YOU MUST PROGRAM THE OUTPUT VOLTAGE SO THAT IT IS COMPATIBLE WITH THE DEVICE YOU WANT TO POWER SUPPLY.

PICTURE 2

How to use the Double Voltage for power supplying with only two batteries receiver/servos and electronic ignition of gas engine obtainig redundancy. Connect output "OUT1" to the receiver and output "OUT2" to the electronic ignition of the engine. Using this set-up you have double and redundant power supply for both receiver/servos and electronic ignition of the engine and this using only two batteries.
ATTENTION: BEFORE CONNECTING THE DOUBLE VOLTAGE TO ANY OTHER DEVICE, YOU MUST PROGRAM THE OUTPUT VOLTAGE SO THAT IT IS COMPATIBLE WITH THE DEVICE YOU WANT TO POWER SUPPLY.

REDUNDANT POWER SUPPLY



REDUNDANT POWER SUPPLY

PICTURE 3

How to use the Double Voltage for power supplying the servo programming unit MAC16.

Connect output OUT1 of the Double Voltage to input BAT1 of the MAC16 unit.
Connect output OUT2 of the Double Voltage to input BAT2 of the MAC16 unit.

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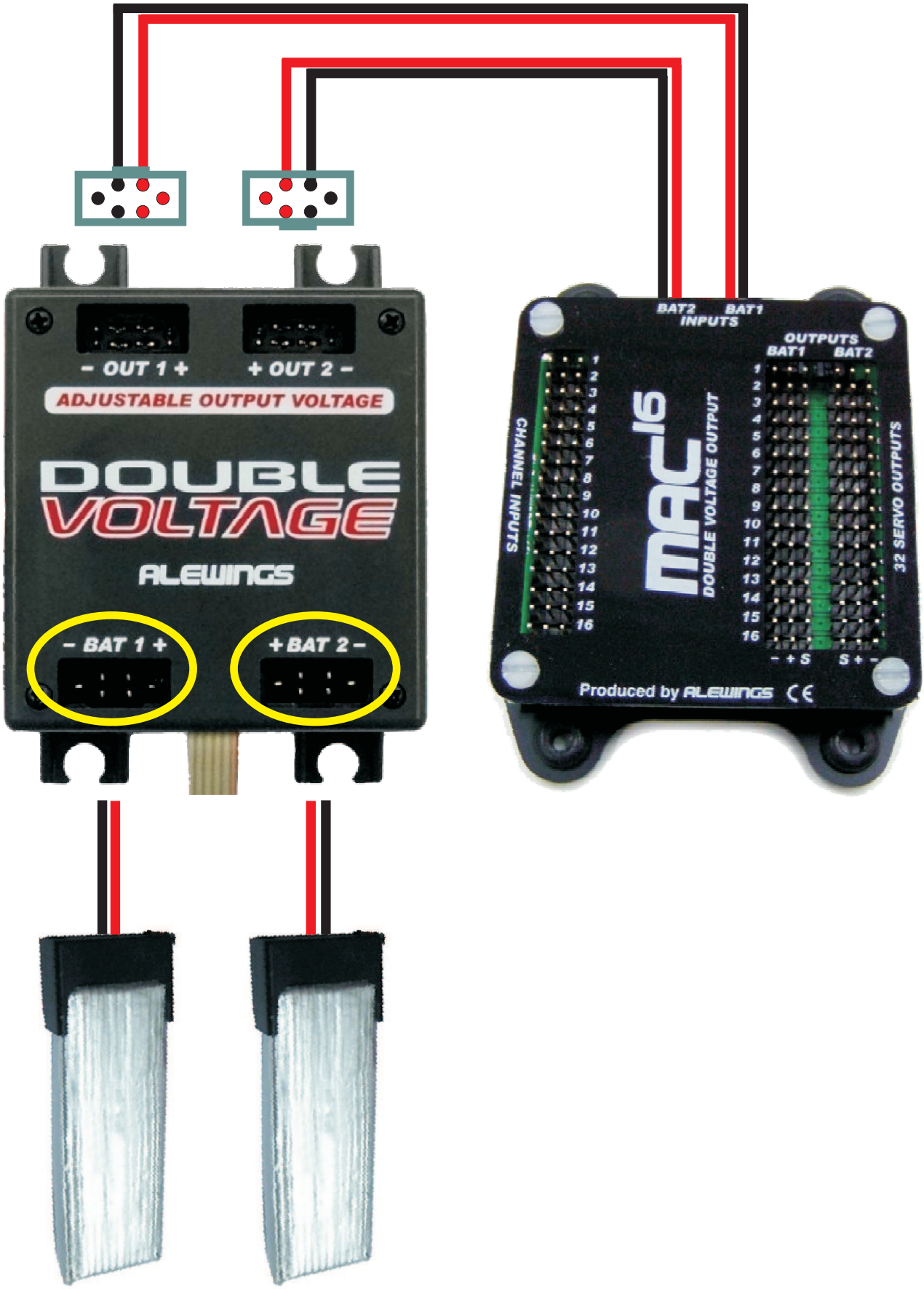
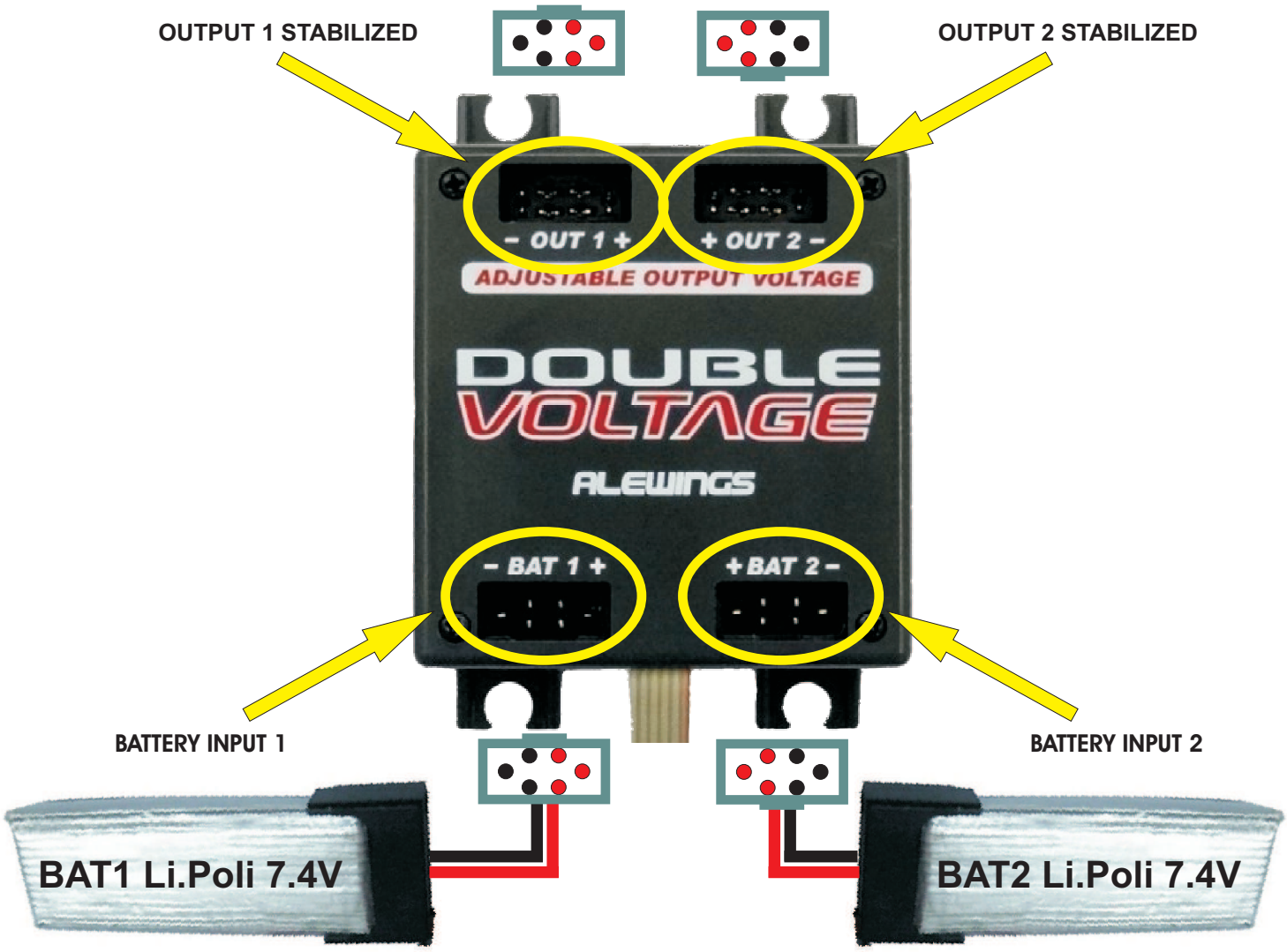


CONNECTIONS

REDUNDANT POWER SUPPLY OUTPUTS



USAGE

Before using the Double Voltage select on the back side of the device the output voltage suitable for receiver and servos in your possession.

TURNING ON:
With both batteries connected to the Double Voltage (in "BAT1" and "BAT2" inputs) press the button and keep it pressed for at least two seconds; when LEDs light on, release the button.
Once turned on the system activates the two outputs "OUT1" and "OUT2" and LEDs start to flash at different frequences according to the batteries status.
If one battery is discharged or missing, the LED is steady on (See the paragraph "Batteries status").

TURNING OFF:
With the device turned on, press the button and keep it pressed for at least two seconds for turning it off.
As soon as the button is pressed the LEDs become steady on and after two seconds they turn off, at this point you can release the button and the device is off.

Note:
Before turning the device off or at the end of a session of use, is always recommended to check the batteries status as the system keeps memory of the lowest voltage recorded during the last session. When you turn the device off this value is resetted.

ATTENTION: WHEN YOU CONNECT THE FIRST BATTERY, THE DEVICE AUTOMATICALLY TURNS ON (THIS IS BECAUSE IF THERE WAS AN UNSTEADY CONTACT AND POWER SUPPLY WERE CUT OFF, AT THE RETURNING OF POWER THE DEVICE WOULD TURN ON AUTONOMOUSLY). IT IS THEREFORE NECESSARY, AFTER CONNECTING THE FIRST BATTERY, TO TURN THE DEVICE OFF AND ON AGAIN TO RESET THE BATTERY STATUS INDICATORS

ATTENTION: if you won't be using the device for more than 1 week, disconnect batteries from the device.

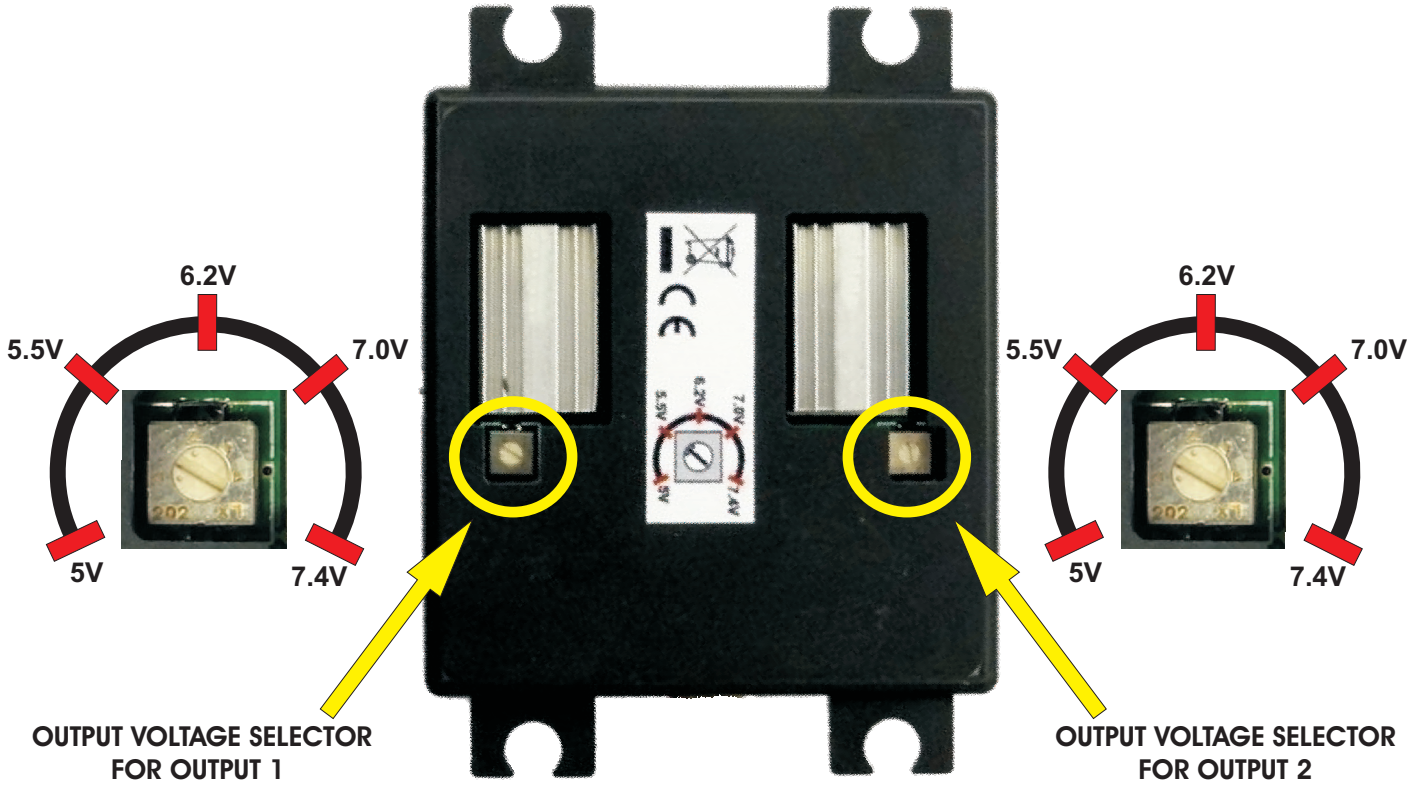
VOLTAGE REGULATING

SETTING THE OUTPUT VOLTAGE OF OUT 1 AND OUT 2

Using a small screw driver, for each output rotate the selector and choose the position corresponding to the desired voltage.

f you want to set a voltage between values indicated or with a precision to one tenth of a volt, you are suggested to use a voltmeter in order to read the output voltage while setting.

For each output position the tips of the voltmeter on the positive and negative pole of the output connector; than rotate the selector: you will be able to set the voltage with maximum precision.



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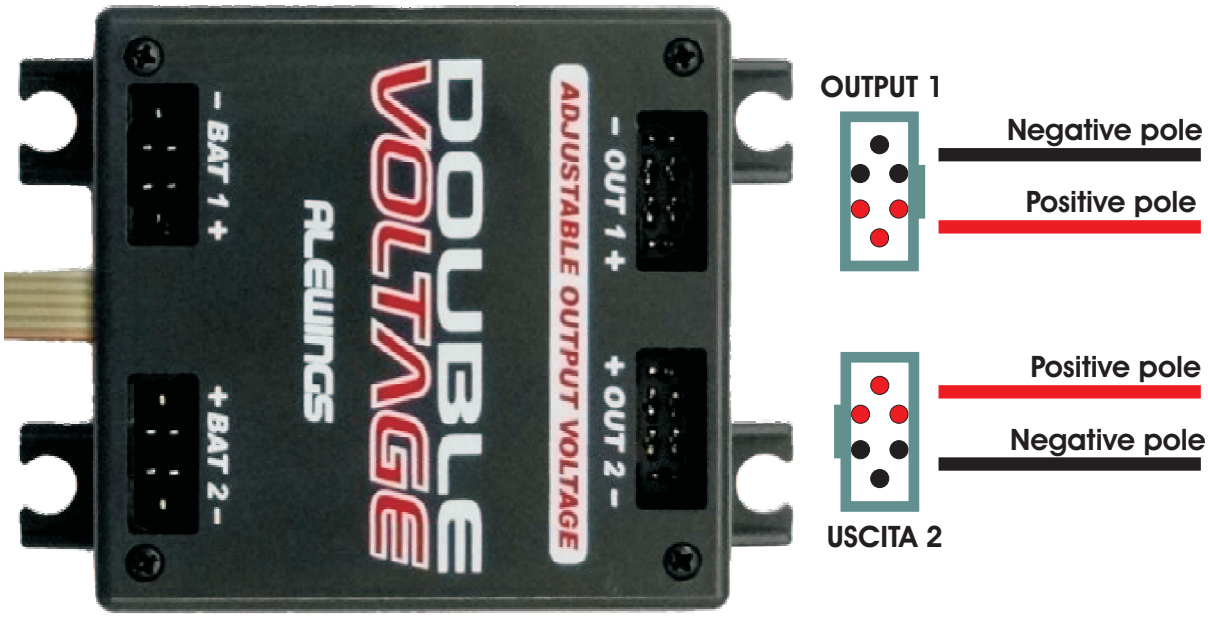


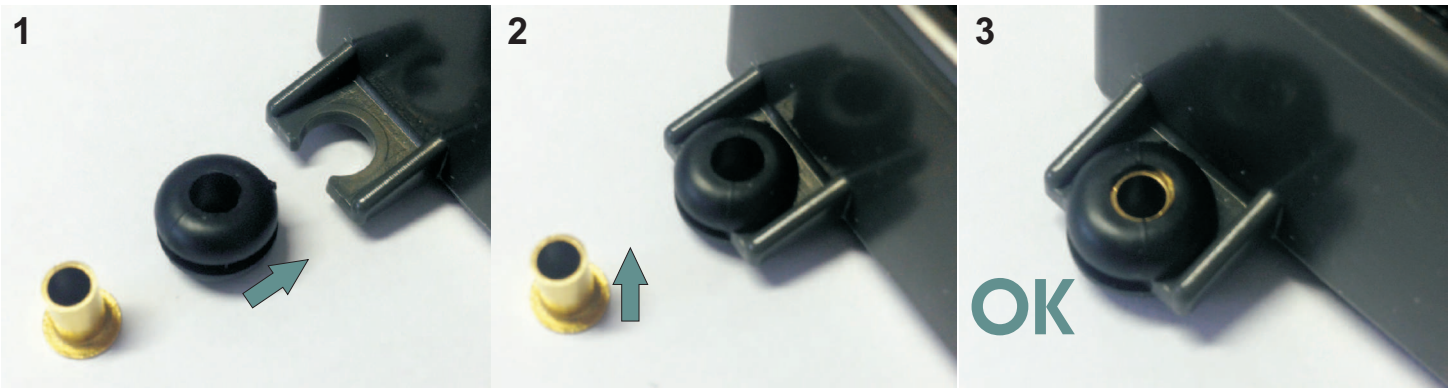
FIXING

Preparing the device for fixing:

nlsert the four rubberdampers provided into apposite seats on base of the device.

Insert the four brass small tubes into holes in dampers so that they exit just a little both above and below.

Prepare the four self-threading screws provided that you will use for fixing the device.



Preparing the mounting surface (hereinafter called rx plate):

- Case 1: fixing the device directly to rx plate: position the device into desired place and drill for holes for screws. Create into rx plate some openings in correspondence with heat sinks and air intakes of the device, so that air can pass and cool it. With device into mounting position, insert the four screws and tight them until they touch the brass small tubes.

Don't tight too much, don't press dampers.

- Case 2: fixing the device with spacers: the device into desired place and create four spacers at least 10mm thick in correspondence with fixing holes. Drill four holes for screws; with device into mounting position, insert the four screws and tight them until they touch the brass small tube.

Don't tight too much, don't press dampers.

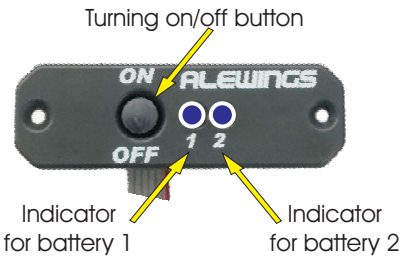
BATTERIES STATUS

After two seconds since turning on, the system starts to monitor the charge status of the batteries. LEDs emit flashes indicating status and residual charge of the batteries: more rapid are the flashes and less batteries have residual charge. LEDs fixed on indicate alarm status. To reset the alarm, turn the device off and on again. If the alarm persists, check connections and residual charge of the battery.

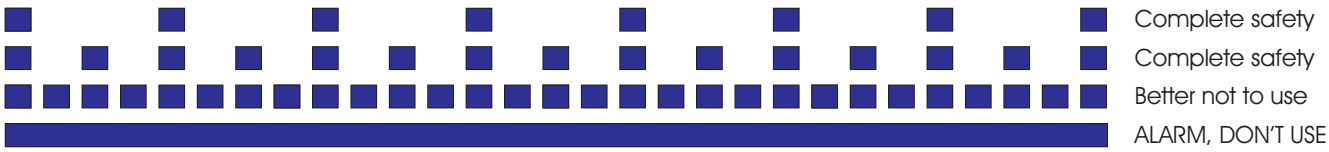
ATTENTION: if LEDs are steady on, don't use the device.

Li.Poli 2S 7,4V battery

1 flash every 2 sec	:	>7,5V
1 flash every 1sec	:	>7,2V
1 lflash every0,3sec	:	>7,1V
Fixed on	:	<7,1V and power missing



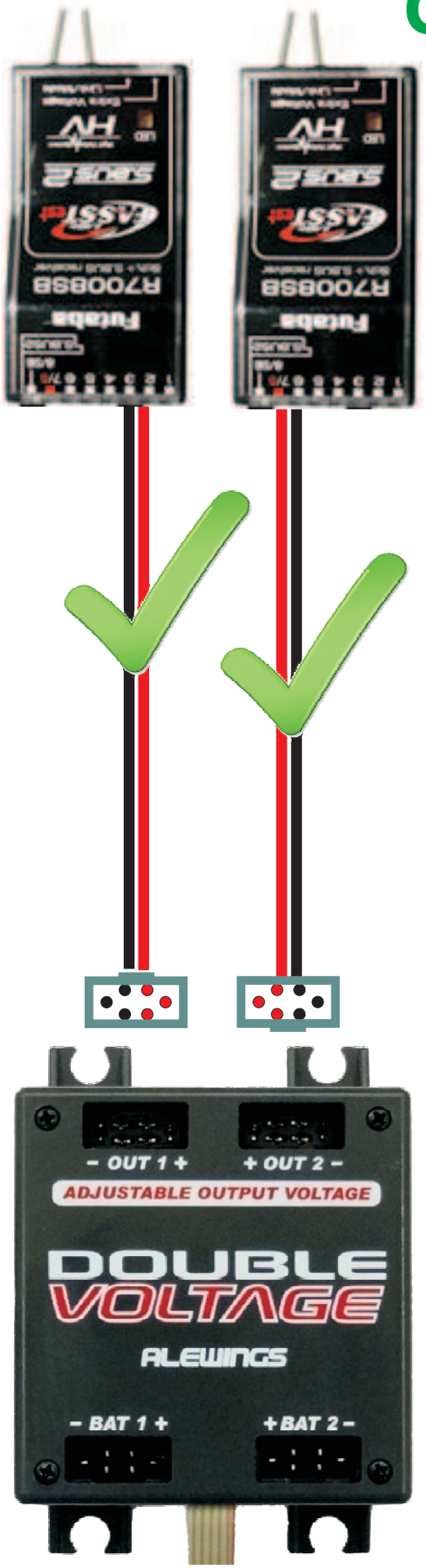
Graphic representation and meaning of flashes



ATTENTION: the indicated battery charge value isn't the instantaneous voltage but is the minimum registered voltage from the last switching on. The system keeps memory of the lower registered voltage, measured during the real work of the device under load

EXAMPLE

OK



EXAMPLE

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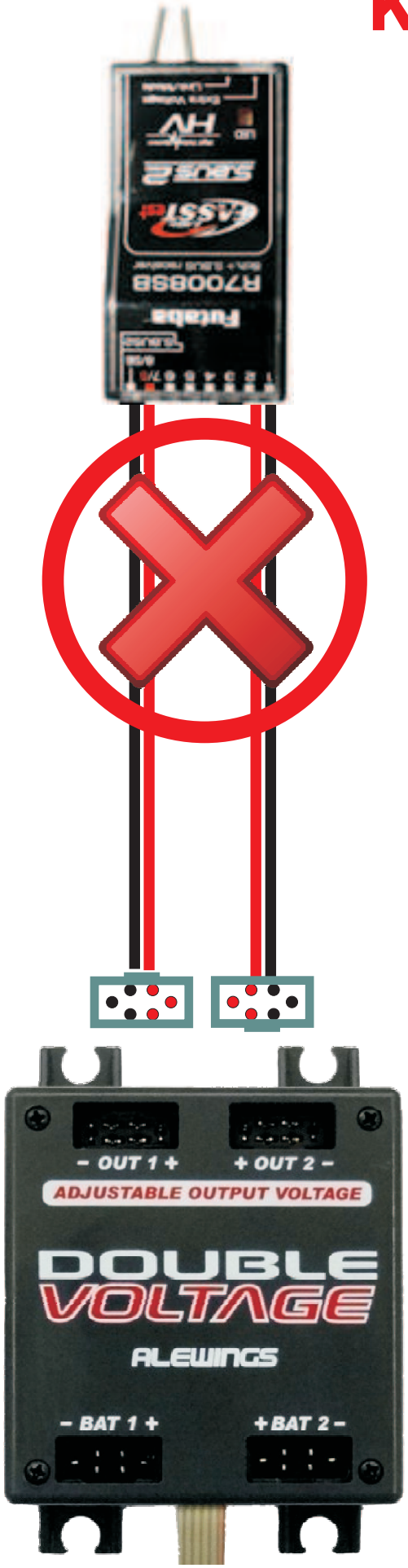
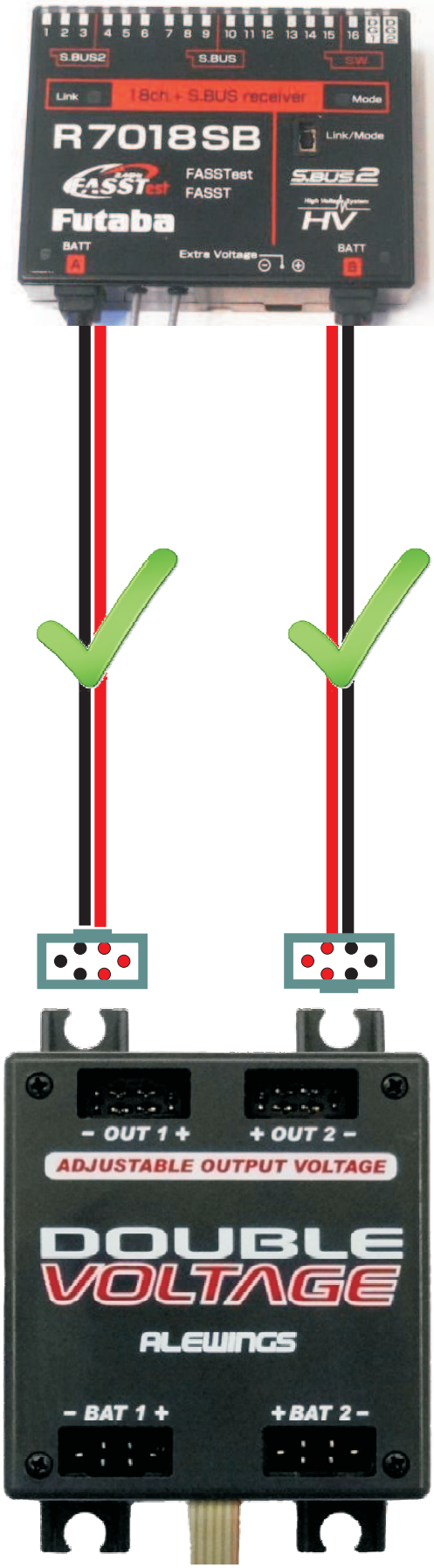


EXAMPLE

OK



EXAMPLE

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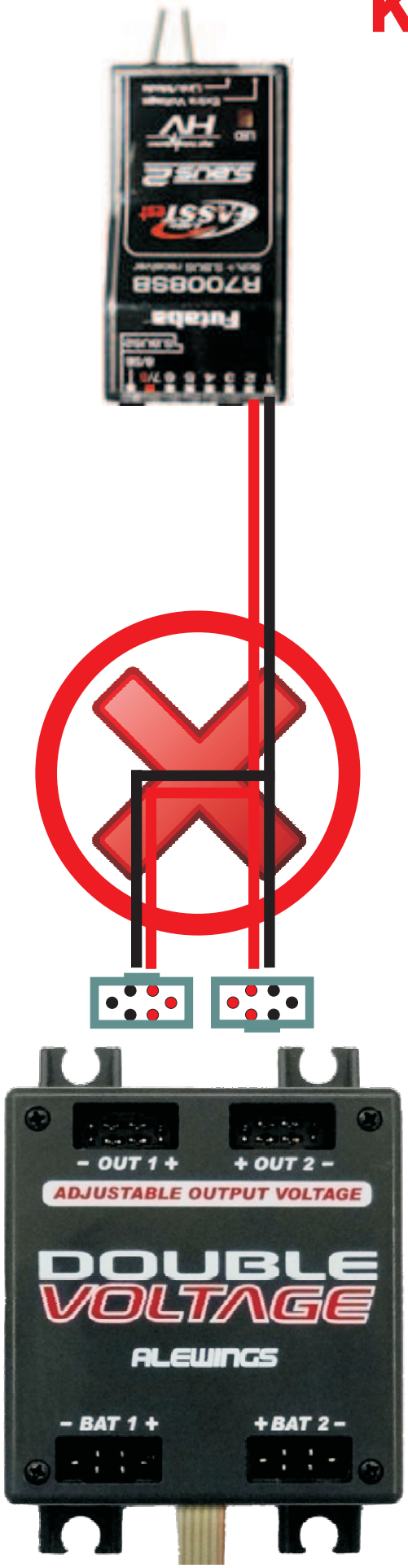

WARNINGS

ATTENTION:

Use only batteries of type Li.Poli 2s 7,4V

Pay attention not to invert polarity of the batteries

- Pay maximum attention to connector polarity, both on the side of inputs BAT1 and BAT2 and of outputs OUT1 and OUT2 Inversion of polarity damages the Double Voltage and/or the devices connected to it.

- Don't cause short circuits on the outputs of the Double Voltage ; short circuits, even short ones, may cause hard damages.

- Overtemperature may damage the Double Voltage; be sure that heatsinks receive adequate aeration (follow instructions at th paragraph "Fixing").

- In order to have a safe fixing, use only the material provided without modifing instructions of the paragraph "Fixing".

- If you won't be using the device for more than one week, disconnect both batteries.

WARNING

This is not a toy.

Pay close attention to the following points, as the non observance of them can destroy the product, nullify your warranty and lead to property damages or personal severe injuries!

- Never leave the product unattended while it is switched on, in use or connected with a power supply. If a defect occurs, it could set fire to the product or to the surroundings.
- Avoid incorrect connections or connections with reversed polarity.
- All wires and connections have to be well insulated. Short-circuits might destroy the product.
- Never allow this product or other electronic components to come into contact with water, oil, fuels or other conductor liquids, as these could contain minerals, which are harmful for electronic circuits. If this happens, stop the use of your product immediately and let it dry carefully.
- Always wire up all the parts of the equipment carefully. If any of the connections loosens, due to vibrations, you might damage your device.
- Never cut off or modify the original plugs
- Never change the polarity of the receiver connectors
- Do not open the product and never solder on the PCB

SPECIFICATIONS

Dimensions:	80x61x23mm 45x15mm External panel
Weight:	71gr with external panel
Operating Voltage:	from 6V to 8,4V
Power surce:	2x 2S LiPoli 7,4V
Current drain in ON state:	50mA
Current drain in OFF state:	95uA (500mA after 6 months unused)
Output1 voltage programmable:	from 5v to 7.4V 20A peak
Output2 voltage programmable:	from 5v to 7.4V 20A peak
Warking temperature:	-10° up to +60°C

These specifications may be changed without advance notice.

WASTE DISPOSAL

At the end of its life cycle this product is subject to special waste disposal and it cannot be disposed with urban waste