



ELE S SERIES

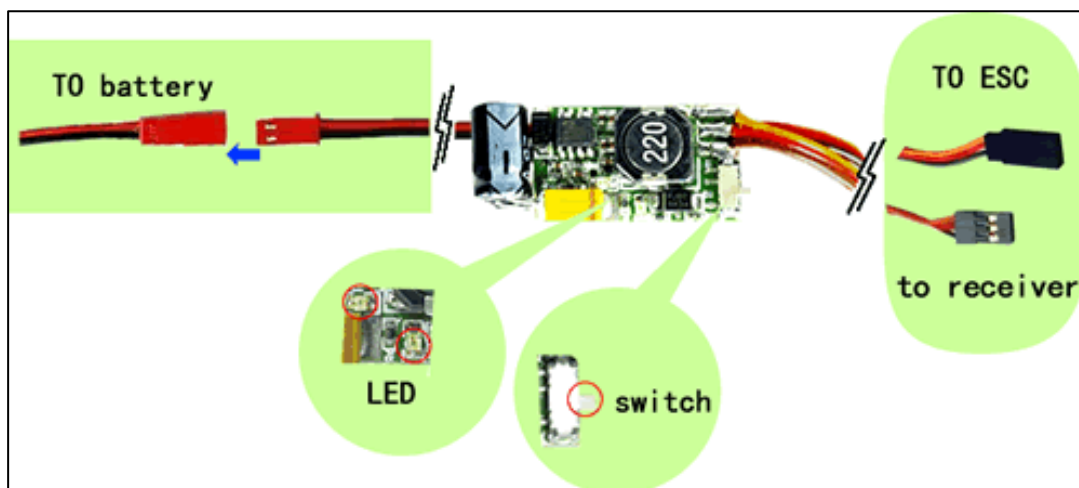
UBEC

ELE s Series *UBEC*

Thank you for purchasing ELE products, we strongly suggest you to read this manual carefully before using it, because high power system for RC model can be dangerous, you must put the product into use under the instruction of experienced player.

Product name: ELE S Series 5V/6V SWITCHABLE UBEC:

1. Wiring Diagram:



2. Specification:

class	S-5	S-3
Continues Current (A)	5	3
Output Voltage (V)	5V/6V (Switchable)	5V/6V (Switchable)
Input Voltage (V)	5.5-23V	5.5-23V
Size (length*width*height)	41.6mm*16.6mm*7.0mm	41.6mm*16.6mm*7.0mm
Weigh:	5g (input and output cables are not included); 9g (cable included)	4g (cable not included); 9g (cable included)
Ripple:	<45mVp-p (@4A/12V	<45mVp-p (@2A/12V

3. Features:

- the built-in the signal cable of female end which connects with the ESC doesn't need to rebuilt and without connecting with it through channel needed by receiver, it is also a very economic way for not using T-connector parallel pack lead.
- UBEC can keep the ESC and BEC apart automatically, no need to shut off power to the ESC when put it into using, UBEC is a very effective and convenient way.
- It applied heavy gauge input/output wire with high quality which effectively meet the working current needs that is over 10A.
- it is small and light.
- The product applied a specially designed power switch system, its frequency of Master chip is 300KHz, and it also have the protective functions such as over-current and over-heat, its efficiency over 92%.
- Input current is very high (S5 is 5A, S3 is 3A)
- it is very suitable for high working voltage(Lipoly pack with 2-5 cells in inline type, or Nickel-hydrogen/nickel-cadmium battery pack with 5-15 cells.
- 5V/6v output switching.
- it is lighter and more reliable by turning over the switch for the choice of output voltage.
- Don't worry about the polarity of battery pack, if the polarity is not correct, the UBEC can't work, but it will not be destroyed, what you need to do is just swap the battery pack polarity.
- user can know the working state through LED, When the output of power is normal, the light is on, at the same time, LED can display different color for the working state of 5V/6V. the blue light is on and the red is off when the output voltage is 5V; both red and blue light is on when the output voltage is 6V.
- it applied high quality and large capacity Tantalum capacitance which is made in Japan, therefore, the power output is more stable and reliable, also reduced its weight.
- S series UBEC have the following features compared with the traditional linear BEC:
 - a traditional linear BEC, For example, a 4s lithium battery pack has a typical voltage of 14.8V, in order to let BEC output 5V/1A, the current flow into BEC is at least 1A, so the power on BEC is $14.8V * 1A = 14.8W$. But the useful output power is only $5V * 1A = 5W$, so the efficiency of BEC is just $5W / 14.8W = 33.8\%$, the redundant power $14.8W - 5W = 9.8W$ changes to heat, which makes the BEC very hot.
 - For a switch-mode BEC in the above case, in order to let BEC output 5V/1A, the current flow into BEC is only 0.38A (actual test data), so the power on BEC is $14.8V * 0.38A = 5.6W$, and the efficiency of BEC is $5W / 5.6W = 89.3\%$.

4. How to use:

- No change is needed for ESC, just connect the input cables of UBEC with the battery, and plug the UBEC's output cable (connector) into one spare channel of receiver(please look over the diagram).
- We suggest the working voltage is 5V for ordinary R/C model products, and for R/C model with acrobatic flying(needs the servos at its max working capacity), the working voltage must switch to 6V.
- UBEC is a component for power capacity, it should be installed on a position with more air exposure.

5. Special attentions

- please select your servos correctly, be sure that the overall working current of these servos is well below rated current of UBEC. You'd better measure the current with special measurement when you are convenient.
- please select the working voltage of the UBEC correctly, be sure that all the servos are working under the right voltage, otherwise the servos will be burnt or its working time reduced.
- please select the right batteries, be sure not over the range of the rated voltage.
- prohibit from misconnecting the polarity of battery pack, be sure shut the power off if misconnecting happens, otherwise will cause damages to the UBEC for ever.
- please don't dismantle or assemble the electronic component of the UBEC, irreparability damages will caused by such action.

Declaration: our company would not inform our users if there are changes of functions and appearance which is because of different designing.