



## SKYSPORT

Airplane & Heli controllers  
with **GOVERNOR** mode



**SKYSPORT 20 BEC**



**SKYSPORT 30 BEC**



**SKYSPORT 40 BEC**

ENGLISH

**INSTRUCTION MANUAL**

## SKYSPORT 20 BEC



Cont. Current: 20A  
Burst Current: 30A  
N° of Cells: Ni-xx 5 - 10  
Li-xx 2 - 3  
BEC: 5V / 2A  
Dimensions: 52 x 24 x 8mm  
Weight: 26.0g

**LV 2•3S**

## SKYSPORT 30 BEC



Cont. Current: 30A  
Burst Current: 40A  
N° of Cells: Ni-xx 5 - 10  
Li-xx 2 - 3  
BEC: 5V / 2A  
Dimensions: 52 x 24 x 8mm  
Weight: 26.0g

**LV 2•3S**

## SKYSPORT 40 BEC



Cont. Current: 40A  
Burst Current: 50A  
N° of Cells: Ni-xx 5 - 10  
Li-xx 2 - 3  
BEC: 5V / 3A  
Dimensions: 65 x 28 x 8mm  
Weight: 28.0g

**LV 2•3S**

## **WARRANTY**

We guarantee this product to be free of manufacturing or assembly defects for a period of one year from time of purchase. This does not affect your statutory rights. 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 for products deemed defective due to those causes. You will be required to produce proof of purchase (invoice or receipt).

This warranty is not valid for any damage or subsequent damage arising as a result of a misuse, modification or for damage or consequential damage arising as a result of failure to observe the procedures outlined in this manual. Operation of this product is carried out entirely at the risk of the operator.

Please note that, whilst every effort is made to ensure the accuracy of instructions and material included with this product, mistakes can occur and neither RC-PLUS nor its distributors will be held liable for any loss or damage arising from the use of this product or for any loss or damage arising from omissions or inaccuracies in the associated instructions or materials included with this product.

We reserve the right to modify the design of this product, contents, manuals without prior notification.

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The **SKYSPORT**-Series ESC allows you to program all functions to fit your specific needs, which makes it very efficient and user friendly:

1. Brake Setting
2. Battery Type(LiPo or NiCd/NiMh)
3. Low Voltage Cutoff Setting
4. Factory Default Setup Restore
5. Timing Settings (to enhance ESC efficiency and smoothness)
6. Soft Acceleration Start Ups (for delicate gearbox and helicopter applications)
7. Governor Mode (for helicopter applications)
8. Motor Rotation (clockwise\counterclockwise)
9. Switching Frequency
10. Low Voltage Cut-off Type (power reduction or immediate shutdown)

## **WIRES CONNECTION**

The speed controller can be connected to the motor by soldering directly or with high quality connectors. Always use new connectors, which should be soldered carefully to the cables and insulated with heat shrink tube. The maximum length of the battery pack wires shall be within 15cm.



## CONNECTING & SETTING THE SKYSPORT

The ESC features Automatic Throttle Calibration to obtain the smoothest throttle response and resolution throughout the entire throttle range of the transmitter. This step is done once to allow the ESC to "learn and memorize" the Transmitter's throttle output signals and only repeated if you change the transmitter.

1. Switch your Transmitter ON and set the throttle stick to the maximum position.
2. Connect the battery pack , receiver and motor to the ESC. Wait for about 2 seconds, the motor will beep for twice, then put the throttle stick to the minimum position, the motor will now beep, which indicates that your ESC has got the signal range of the throttle from your transmitter.

The throttle calibration is set and your ESC is ready to use.

## PROGRAMMING MODE

1. Switch your Transmitter ON and set the throttle to its maximum position.
2. Connect the battery pack to the ESC.
3. Wait until you hear 2 short beeps (•• •• ••) confirming that the ESC is now in the programming mode.
4. If the throttle stick is left in the maximum position beyond 5 seconds, the ESC will begin the sequence from one function and its associated setting options to another. (Please refer to the table below to cross reference the functions with the audible tones).
5. When the desired tone for the function and setting option is reached, move the throttle stick down to its minimum position. ESC will emit two beeps (\*\*) confirming the new setting has been stored.
6. The ESC only allows the setting of one function at a time.

Therefore should you want making changes to other function, disconnect the battery pack, wait 5 seconds, reconnect the battery and repeat the above steps.

| Programming Mode Audible Tones                    |  | ESC Functions  |
|---|--|--|
| Throttle Calibration<br>(within the first 4 Sec ) |  |  |
| 1 Brake   |  | - * * * -   Brake On /Off  |
| 2 Battery type                                    |  | ~ ~ ~ ~   NiCad<br>~~ ~~ ~~ ~~   LiPo  |
| 3 Low Voltage Cut-off Threshold                   |  | * * * * * * -   Low (2.8V/50%)<br>* * * * * * *   Medium (3.0V/60%)<br>* * * * * * *   High (3.2V/65%) |
| 4 Restore Factory Setup Defaults                  |  | - - - -   Restore  |
| 5 Timing Setup                                    |  | - - -   Automatic (7°-30°)<br>- - - -   Low (7°-22°)<br>- - - - -   High (22°-30°)                     |
| 6 Soft Acceleration Start Ups                     |  | □□□□□□   <b>Very Soft</b><br>□□□   <b>Soft Acceleration</b><br>□□□□□□□□   <b>Start Acceleration</b>    |
| 7 Governor Mode                                   |  | * * * *   Rpm off<br>** * * * *   Heli first range<br>*** * * * *   Heli second range                  |
| 8 Motor Rotation                                  |  | W W W W   Forward/ Reverse   |
| 9 Switching Frequency                             |  | // // //   8kHz<br>\\ \\ \\ \\   16kHz   |
| 10 Low Voltage Cutoff Type                        |  | - - -   Reduce Power<br>- - - -   Hard Cut Off   |

## TROUBLE SHOOTING

| Trouble  | Possible Reason   | Solution  |
|--|---|---|
| Motor doesn't work, there's no audible tones while servos work properly after powering up ESC.   | The ESC throttle calibration has not been set up.   | Set up the ESC throttle calibration.  |
| Motor doesn't work and no audible tone emitted after connecting the battery.<br>Servos are not working either.   | Poor/loose Connection between battery Pack and ESC.<br>No power<br>Poor soldered connections (dry joints)<br>Wrong battery cable polarity<br>ESC throttle cable connected to receiver in the reverse polarity<br>Faulty ESC | Clean connector terminals or replace connector.<br>Replace with a freshly charged battery pack<br>Re-solder the cable connections<br>Check and verify cable polarity<br>Check the cable connected to the ESC to ensure there is the correct polarity.<br>Replace ESC  |
| Motor doesn't work and no audible tone emitted after connecting the battery BUT servos are working. Or Motor doesn't work after powering up the ESC. An alert tone with single beeping tones followed by a short pause (" * * ") is emitted. | Poor/loose connection between ESC and motor<br>Burnt motor coils<br>Poor soldered connections(dry joints)<br>The battery pack voltage exceeds the acceptable range.   | Clean or replace terminals connector<br>Replace motor<br>Re-solder the cable connections<br>Replace with a freshly charged battery pack   |
| Motor doesn't work after powering up the ESC. An alert tone with continuous beeping tones (" ** ") is emitted.   | The throttle stick is not in the minimum position at power up.  | Move the throttle stick to the minimum position.  |
| Motor doesn't work after powering up the ESC.<br>ESC emits two audible tones followed by short beeps (*** *** )  | Reversed throttle channel caused the ESC to enter the programming mode.   | Enter the servo reverse menu on your transmitter and reverse the throttle channel. Note: For Futaba radios set the throttle channel to Reverse.   |
| Motor runs in reverse rotation   | Wrong cables polarity between the ESC and the motor.  | Swap any two of the three cable connections between the ESC and the Motor or access the Motor Rotation function via the ESC programming mode and change the pre-set parameters.   |
| Motor stops running in flight.   | Lost throttle signal<br><br>Battery Pack voltage has reached the Low Voltage Protection threshold.<br><br>Possible bad cable connection   | Check proper operation of the radio equipment. Check the placement of the ESC and the Receiver and check the route of the receiver's aerial and ESC cables to ensure there is adequate separation to prevent RF interference<br>Install a ferrite ring on the ESC's throttle cable.<br><br>Land the model immediately and replace the battery pack.<br><br>Check and verify the integrity of the cable connections  |
| Motor restarts abnormally ESC Over-heats   | Possible RF Interference at the flying field.<br><br>Inadequate Ventilation<br><br>Servos drawing too much current and over loading the ESC.<br><br>Over sized motor or prop  | The normal operation of the ESC may be susceptible to surrounding RF interference. Restart the ESC to resume normal operation on the ground to verify recurrence. If the problem persists, test the operation of the ESC at a different flying field.<br><br>Relocate the ESC to allow better ventilation<br><br>Use servos that are adequately sized for the ESC. The maximum BEC current drawn should be within the BEC limits.<br><br>Reduce Prop size or install a another motor. |