ESC for Boat

2S to 22S

FLIER

User's Manual

http://www.fliermodel.com

ESC for Boat Manual

Thank you for purchasing our products! For the high power of this brushless system, failure to use may result in injury yourself and damage of the whole device. So we highly recommend you to read carefully and abide by the operating procedures of this manual before the first flight. Flier is not responsible for your misuse of this product, or any damage including incidental losses or indirect losses you may cause. Moreover, we have not any responsibility for the modification of our products without authorization. We have the right to change the design, features, functions and operating requirement of our products without any advanced notice!

Feature

1. **Design for boat, more functions**
2. **Battery voltage from 2S to 22S for super high voltage version.**
3. **Two way communication while connecting it with computer.**
4. **Firmware can be upgraded by user.**
5. **Simply set function value by Prog-Box or by PC via USB link wire.**
6. **Li-MH/Li-Po, Ne-Cd/Ne-mH, LiFe battery can be use.**
7. **Enables setting the voltage per cell for the point at which the controller's cut off circuitry engages. Li-MH/Li-Po from 2.0-3.6V, Ne-Cd/Ne-mH 0.4-1.0V, LiFe from2.2-2.8V .**
8. **Timing settings may be adjusted (0°-30°) per degree to suit the motor type**
9. **3 types of throttle curve .**
10. **Automatically detection the throttle range or can be set a fixed value by manual operation.**
11. **Auto cut off the power within 3 seconds if no radio signs.**
12. **6 levels break system.**

Catalog

Volts	Current Continue/Max	BEC	Size(mm)	Weight(g)	Pictures
2-7S	120A/180A	5V/3A	98*38*22	106	A
2-8S	200A/300A	5V/3A	123*59*26	270	B
	250A/320A	5V/3A	102*48*22	186	C
	300A/450A	5V/3A	168*59*26	400	D
3-12S	150A/250A	OPTO	145*59*26	350	E
	200A/300A	OPTO	123*55*26	270	B
	300A/450A	OPTO	165*59*26	400	D
3-16S	200A/300A	OPTO	123*55*26	320	B
	300A/450A	OPTO	165*59*26	460	D
	400A/550A	OPTO	172*57*35	460	F
4-22S	400A/550A	OPTO	168*59*35	460	F

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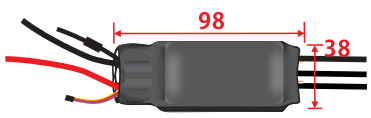

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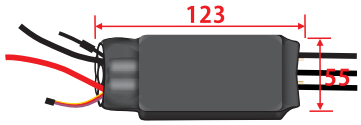

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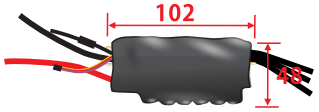

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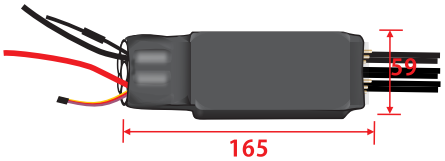

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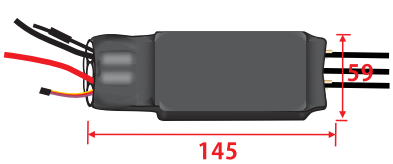

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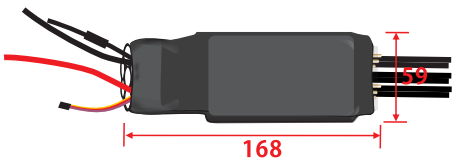


Function Value Function Value

1. Brake: Off, Extra soft, soft medium, Hard, Extra Hard.

2. Timing：0° 、1° 、2° 、3° 、4° ……30° .

3. Frequency: 8KHz, 16 KHz, 32 Khz.

4. Acceleration：Soft / Medium / Hard.

5. Accumulator type：NiCd/NiMh、Li-Ion/Li-Pol、LiFe.

6. NiCd/NiMH CUTOFF：×0. 05、0. 4V、0. 5V、0. 6V、0. 7V、0. 8V、0. 9V、1. 0V。 ×0. 05 means the cut off voltage is 5% the voltage while connecting.

7. Number of cells: Auto, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 12S, 16S.

8. LiIo/Pol CUTOFF：2. 0V、2. 1V、2. 2V、2. 3V、2. 4V、2. 5V、2. 6V、2. 7V、2. 8V、2. 9V、3. 0V、3. 1V、3. 2V、3. 3V、3. 4V、3. 5V、3. 6V.

9. LiFe cutoff：2. 2V、2. 3V、2. 4V、2. 5V、2. 6V、2. 7V、2. 8V

10. Cut Off Type：：Slow down、Hard.

11. Ini point：Auto、fixed 1. 0mS、fixed 1. 1mS、fixed 1. 2mS、fixed 1. 3mS、fixed 1. 4mS、fixed 1. 5mS.

12. End point：Auto、fixed 1. 7mS、fixed 1. 8mS、fixed 1. 9mS、fixed 2. 0mS.

13. Throttle curve: Logarithmical、Linear、Exponential.

14. Rotation direction: Left, Right.

15. Timing monitor（TIMING MONTITOR）: ON, Off.

16. Programming:BoxProgramming support/Computer Programming support.

⚠ *Note:the red value is the factory default value。*

Diagram for wire connection Diagram for wire connection

1. Correctly connect ESC to brushless motor, receiver and battery pack(correctly use the Anti-spark wire while connect the ESC to battery pack).

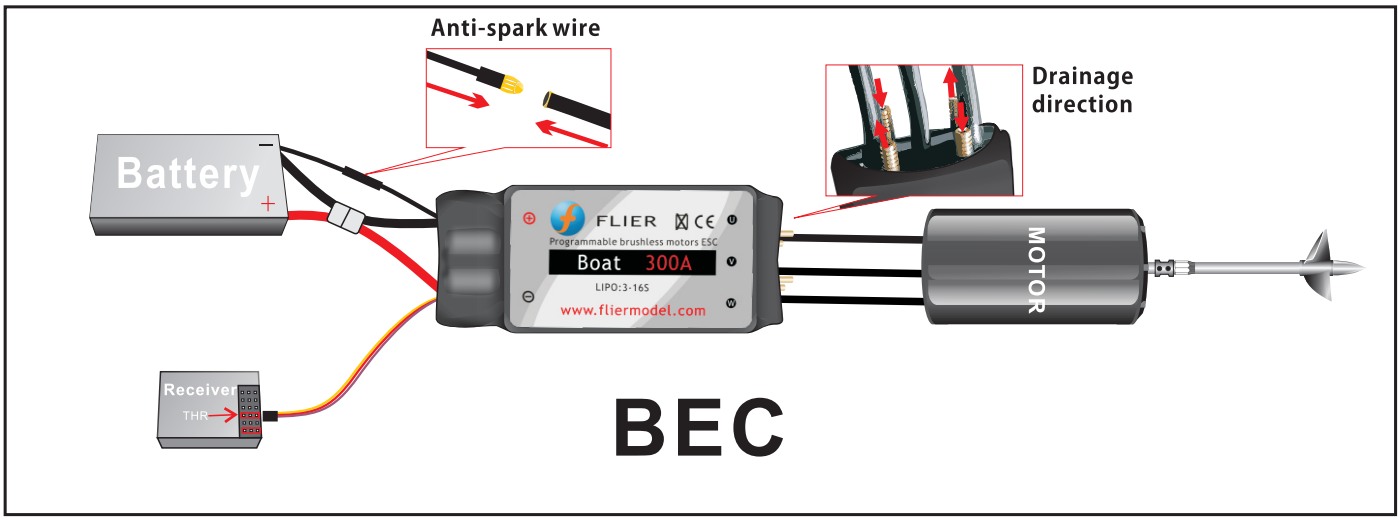
2. Electronics are correctly power on for the setting

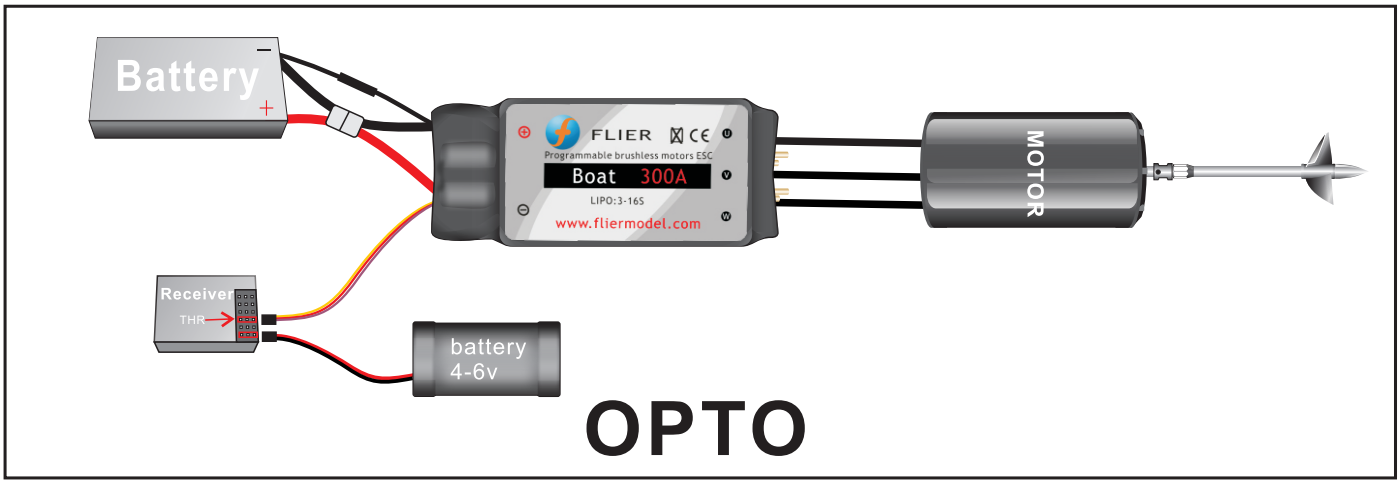
3. Then you will hear ♫♪or ♫♪(if you don't hear the first three beeps, pls check your motor, whether the motor wires is connected well or not. The last one beep means the ESC enter to forward mode, the last two beeps means the esc enter to brake and reverse mode, if you can't hear the last one beep or two beeps, pls check your receiver, whether it's connected well or not, and check your remote control).

4. Pushing the trigger, then the motor will start to work.

⚠ *Notice: Correctly use the anti-spark wires !*

The anti-spark wire including a bullet connector and an anti-spark resistor. So you can separate it into two wires. You must solder the another one to the battery negative. If you want to connect the ESC to the battery, you can connect the red wire of ESC to the positive pole of battery at first. Then connect the anti-spark wires well. The last step is connect the black wire of ESC to the battery's negative pole. If do like that, no spark will be generated, and it will protect the main bullets connector from damaged.





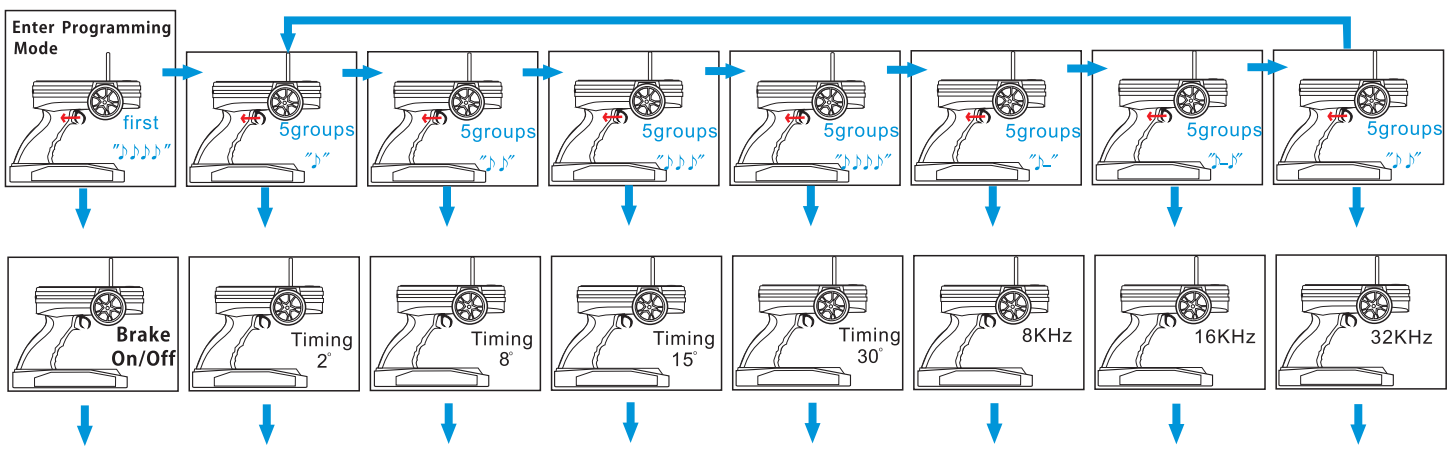
Function value setting by Function value setting by t transmitter

This series ESC can be set some simple function value by transmitter, but the more function value setting must be by prog-box or PC via USB link wire。

This ESC gets two different types of mode, one is Brake ON mode, and nother is Brake Off mode. Change mode setting procedure as follows:

1. Move throttle stick on full power position, turn on transmitter. Now when switching on the ESC, programming sequence will start.
2. Connect the power battery, turn on receiver.
3. After approx. 5 seconds, a four-tone melody can be heard; this indicates that a programming sequence is ready.
4. And then you will hear 5 groups "♪ (a short beep)", then 5 groups "♪♪", then 5 groups "♪♪♪" and then 5 groups "♪♪♪♪"; and 5 groups "♪", 5 groups "♪-(a long beep)♪", 5 groups "♪♪". And these sounds of groups will circulate
5. Each group of 5 sounds stands for a different mode of ESC respectively.
6. You can put the throttle stick to the middle position during one group of 5 sounds, and then the corresponding mode is saved.
7. Hear 1 "♪" (Forward mode) or "♪♪" (Forward/Reverse mode), then you can exit the setting mode after saving the mode.

When the mode is saved, you can disconnect the ESC to the battery pack.



group"♪" (Brake On Mode) or "♪♪" (Brake Off Mode)
Paramrter Saved and Exit Programming Mode

◎Brake On mode and Brake Off mode:

Hear the first "♪♪♪♪", put the throttle stick to the middle position, the mode is changed from Brake ON mode into Brake off mode. If you want to change back, please repeat the above procedures, and vice versa.

◎Timing(motor ignition advance)function value

1. Hear 5 groups "♪" or "♪♪" or "♪♪♪" or "♪♪♪♪" in the above circulation, put the throttle stick to the middle position.
2. Timing mode 1: 5 groups "♪"----0~7° (recommended for 2 poles and common motors)
3. Timing mode 2: 5 groups "♪♪"----8~15°(recommended for 4 poles motors)
4. Timing mode 3: 5 groups "♪♪♪"----16~23°(recommended for 8 poles motors)
5. Timing mode 4: 5 groups "♪♪♪♪"----24~30°(recommended for more than 10 poles motors and out runner motors)

◎Setting of Frequency:

1. Hear 5 groups "♪—" or 5 "♪—♪" or 5 "♪♪" in the above circulation, put the throttle stick to the middle position.
2. Frequency 1: 5 groups "♪—"----8 kHz (For common setting, the lowest efficiency loses)
3. Frequency 2: 5 groups "♪—♪"----16 kHz (recommended for the low internal resistance of motor)
4. Frequency 3: 5 groups "♪♪"----32 kHz (recommended for the low electrical inductance of motor)

⚠ ***Note: when the timing of motor is saved, please adjust motor on the ground before the flight!***

(Diagram for Option parameter assistant by transmitter)

Function value setting by prog Function value setting by prog--- -Box

By the Flier Program Box, you can set all of function value very simply.
Setting procedure as follows:

►.Put the JR tip of ESC Plug in anyone of the 3PIN connector in Prog-Box.

►.Connect ESC and motor, check illustration below.

►.Turn on the ESC, and you will hear a "Bi- "cheep, prompt the connecting is ok and you can go on.

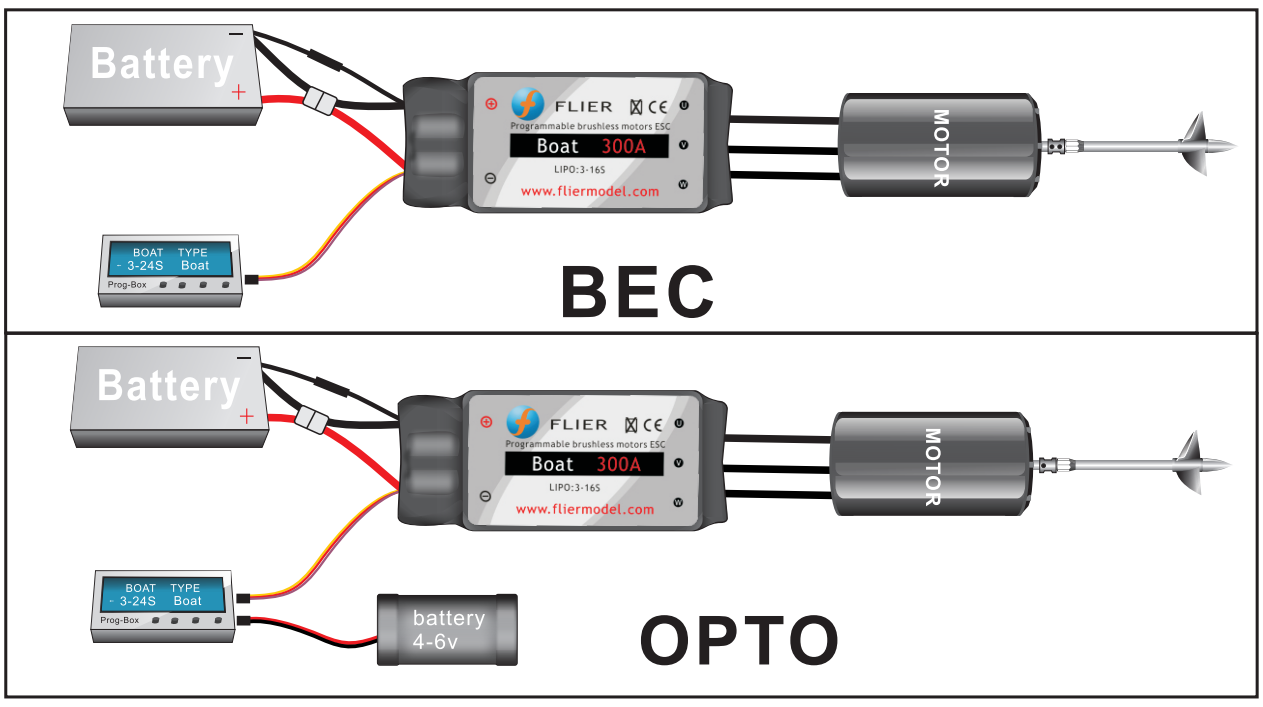
►.Prog-Box display the name of Flier company first, after 5 seconds or pressing any button it will enter the first function-MODE TYPE setting interface.

►.Press← or →button to select the ESC type which you bought from Airplane, Helicopter, Boat, Car, then press "Forward" button to enter into the second function item-CONTROLLER TYPE.then press ← or → button to select the type number of ESC, if your select is right, the motor will cheep, prompt the type number is right.

►.From now on, you can press Back and Forward button enter into desired function item , then press ←and→button enter into desired value. The motor will cheep once press a button, prompt the setting value have sent to the ESC.

►.After setting over, turn off the ESC, disconnect the Prog-Box. The last function value will be record in Prog-Box, the next setting can use it again.

⚠ ***Note: if the ESC you are setting is no BEC, you will have to power to the Prog-Box via another 3pin connector.***



Function value setting by PC

An excellence in this series ESC is that they can be set function value via PC. By a match software designed our company, via a USB Linker, a ESC can communicate with PC, then you can Easily set the ESC function value on PC screen.

If use firstly, you must install the USB Linker driver and the ESC setting software.

Installation of USB Linker' driver

The below are the instructions of how to install the driver under Windows XP,

1. Firstly plug the USB linker into the USB port on the computer. The computer will automatically detect the USB linker and ask for installation of the USB driver. The computer screen shows the window "Found new hardware wizard ". Press "Next" button.

2. Please select "Install from a list or special position (Advanced)" and press "Next" button. 3. Please select "Search for the best driver in these locations" and check "Include this location in the search". In the search dialog specify the location of the USB driver that is located in the CD or driver download folder "USB driver".

4. The above steps probably need to be repeated. If any same prompt appear, please repeat the installation steps carefully until the installation process is complete.

5. Open Windows Device Manager. (Control panel ¨C system ¨C device manager)

6. Find "Ports (COM & LPT)" in the list and click the "+" sign to its left.

7. Find the line that reads "Prolific USB-to-Serial Comm. Port (COMx)". The "x" value is the COM port number that was assigned to the USB to serial converter. This is the port that will need to be selected in the Flier ESC Computer Linking Software. Make note of it.

⚠ *Note: different computer will have different the number of COM port, remember it, you will use the number in the ESC setting software!*

Flier ESC Computer Linking Software Installation

The installation of Flier ESC Computer Linking Software is as the same as the normal windows software. In windows system, you run simplify setup file, and then install it easily according to the prompt. After installation finish, you can run the software. Only after the Flier USB linker connects the Flier ESC to the computer, the software can be operated.

How to program the ESC

1.This is very important. Disconnect the battery, the motor and the receiver. I. e. disconnect all connections of the ESC.

2.Launch the Flier ESC Computer Linking Software. You can see a interface which the above mention. Because the Flier ESC is not connected, the interface isn′ t operated now.

3.Plug your Flier USB linker into the computer, and if the USB linker driver has been installed correctly. The com port can be automatically selected, the automatic selection usually isright, but some computer have too many com port is using. An error com port selection is possible, in this condition; you must select the correct com port which the above mention.

4.Connect the 4pin wires of the USB linker to the 4pin wires of the ESC, pay attention to the color of the wires, must ensure the same color wires connect together, or you will possibly damage the ESC. If you connect correctly, the Flier ESC type will display in the ESC type column. If don′ t display correctly, you can pull the 4pin wires and plug again, till the display is correct.

5.You can see the setting value in the Flier ESC will display the program area. So you can easily know the setting value of the ESC at current.

6.You can change any setting value from the program area; you also can press the "load factory default" text to load the factory default value.

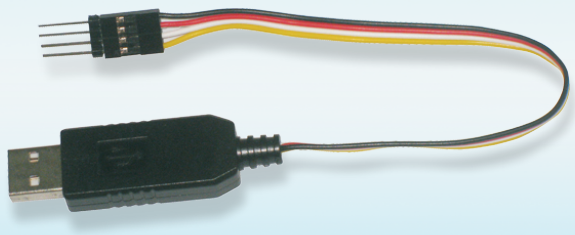
7.After you finish your adjustment. Press the top-right "write" button, your setting value will write into the ESC.

8.Disconnect the 4pin wires,

9.Exit the flier ESC computer software,

10.Pull out the USB liker. Now, your ESC has been programmed.

Programming USB wires



Flier ESC Computer Linking Software Interface Overview

1. The top-left of the interface is "Select COM Port", "ESC type", this will be for comport select and the Flier ESC type display.
2. The top-middle of the interface is a text box. it can display some messages of the software progress.
3. The middle main area of the interface is the program area. You can program the setting value of the ESC here.
4. The top-right of the interface is a write data button. You can press it to write the setting value into the ESC.
5. The bottom of interface displays the copyright and company website information.

Setting ESC Firmware

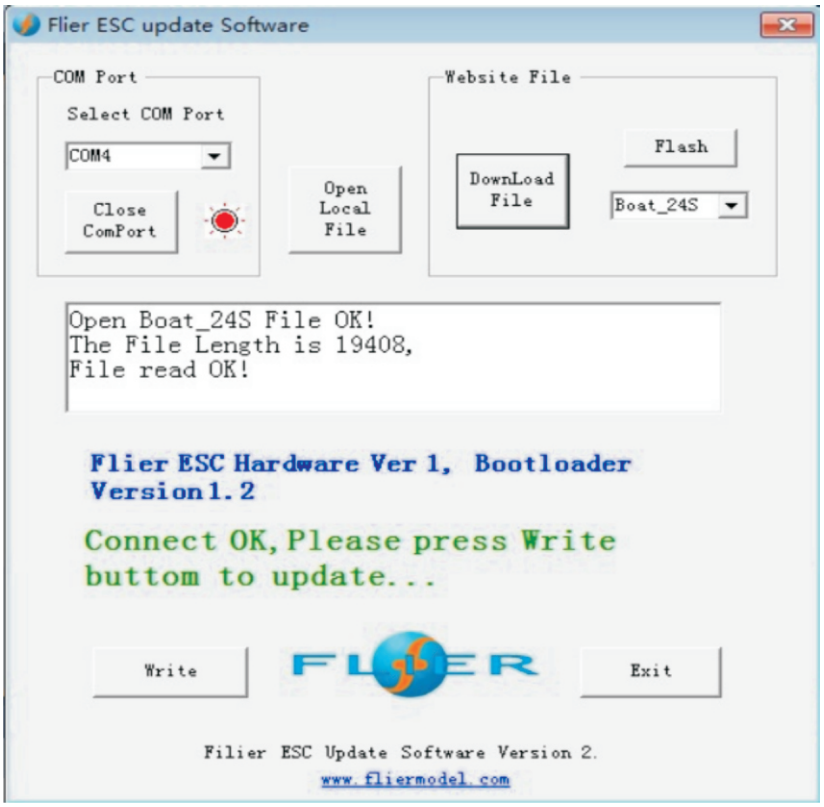
1.Insert the USB link into an USB port of the computer.

2.Run the Update software, the "Com port" will be selected automatically. In case of an error comport choice, please select the correct comport.

3.Selecting the firmware you want to update from "Website File" list, then click the "Download file" button. A prompt that the file is opened will show in the below text box.

4.Disconnect the motor and the battery from the ESC, note, this is very important.

5.Plug into the four pin connector of USB link into the 4pin connector of ESC . Pay attention to the color of the wire, make sure the same color wire is connected.



6.Then the software will prompt the connect OK, If prompt any error, please pull up the 4pin then repeat step5.

7.If no error, click the "Write" button, then the ESC firmware, will be updated automatically you can watch the process of the updating.

8.After the updating is over, you can disconnect the 4pin wires.