# 300A ESC Manuals

## *I* Features

**The 300A ESC is the most powerful brushless speed controller available for rc model airplanes in the market right now. It is microprocessor controlled, and extremely low resistance. The unique design, powerful and optimum performance make the 300A ESC be the best choice for big model airplanes.**

**The aluminum alloy case not only make the ESC be more easily and firmly fixed on airplane, but also can well dissipate thermal heat and keep ESC cool while output powerful watts.**

**The 300A ESC has good cooling system which can dissipate much thermal heat as possible. The two fans keep running when ESC is working. When ESC is powered off, if ESC temperature is detected up to 70 Centigrade, the fans would continue running to cold the ESC until temperature is lower than 50 centigrade.**

## *II* Specifications

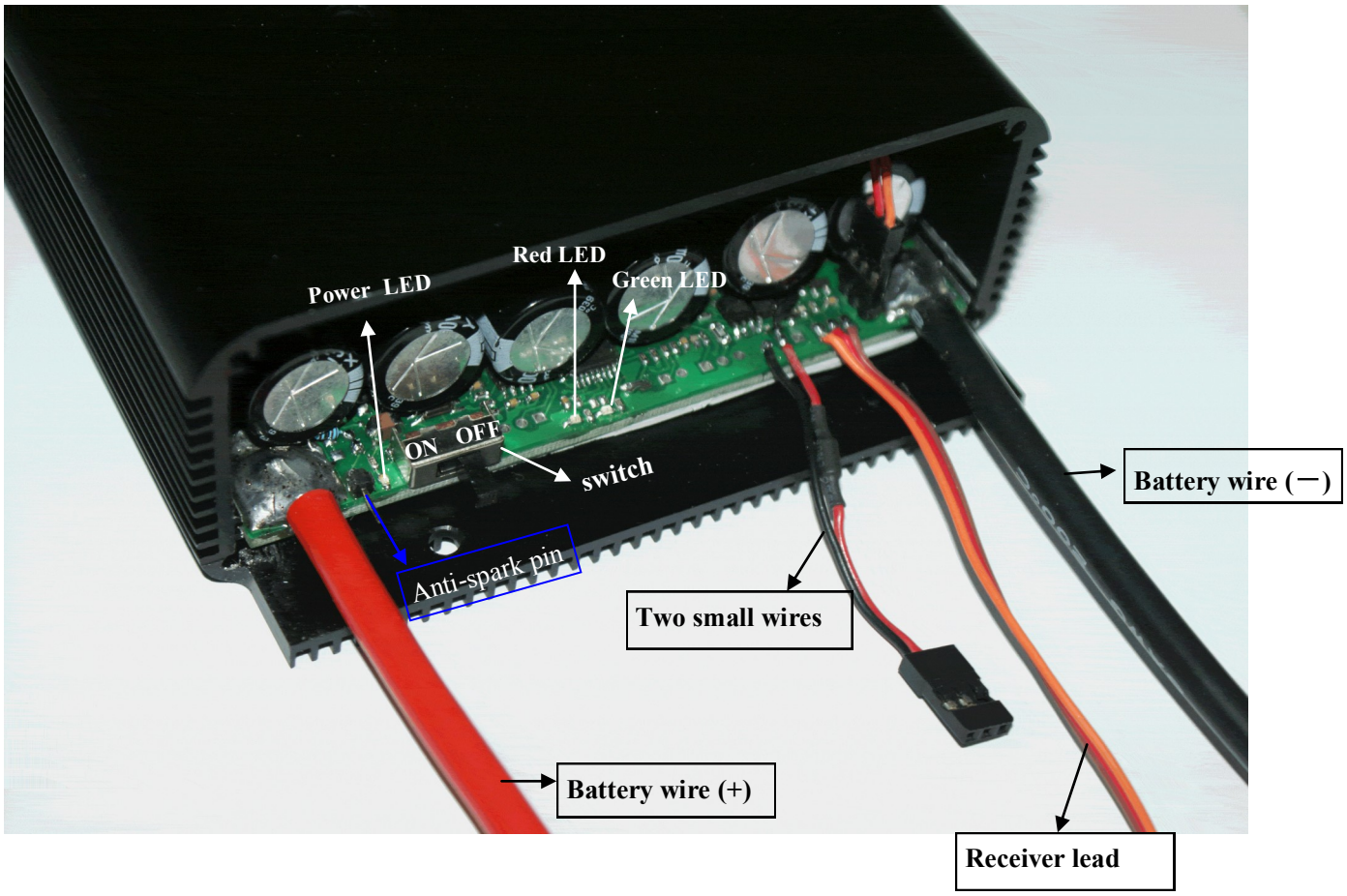
- **Voltage: 4s-15s Lipo (12v-65v)**
- **Current: 300A**
- **No BEC**
- **Size:19cm x 12cm x 4.9cm**
- **Weight:850g**
- **Auto detect Lipo cells**
- **Fully Programmable LVC, cutoff voltage of each Lipo, current limiting, cutoff type, brake type, timing advance, start type and governor mode.**

**The parameters with asterisk * behind are the preset parameters of 300A ESC in factory.**

| **LVC** | 1 cell | 2 cells | 3 cells | 4 cells* | 5 cells | ... | 19 cells | 20 cells | Auto |
|---|---|---|---|---|---|---|---|---|---|
| **LVC/per cell** | 2.5v | 2.6v | 2.7v | 2.8v | 2.9v | 3.0v * | 3.1v | 3.2v | 3.3v |
| **Current limiting** | Sensitivity | Standard* | Insensitivity | Close | | | | | |
| **Brake type** | Close* | Soft | Hard | | | | | | |
| **Timing advance** | Auto* | Low | Middle | High | | | | | |
| **Cutoff type** | Hard* | Soft | | | | | | | |
| **Start type** | Soft | Standard* | Fast | | | | | | |
| **Governor mode** | Auto* | Low | Hight | | | | | | |

# *III* Using the ESC

## A. ESC picture




*** Battery wire (+): Connect positive battery wire of ESC to positive polarity of battery pack.**

*** Anti-spark pin: the pin is used to eliminate the generated sparks when connect ESC to battery.**

*** Power LED: The LED is red. It lights when ESC is powered, and extinguishes when disconnect ESC from battery.**

*** Switch: The switch is used to switch on power or switch off power.**

*** Red LED: When ESC is powered, if this red LED lights, it reports no radio signal is detected. It would extinguish when radio signal is recovered.**

**The Red LED would flash when current limiting of ESC function.**

*** Green LED: The green LED is flashing when ESC is working.**

*** Two small wires: The two small wires is used *ONLY* when connect ESC to Program box.**

*** Receiver lead: Plug the receiver lead to Channel 3 of receiver.**

*** Battery wire (-): Connect negative battery wire of ESC to negative polarity of battery pack.**

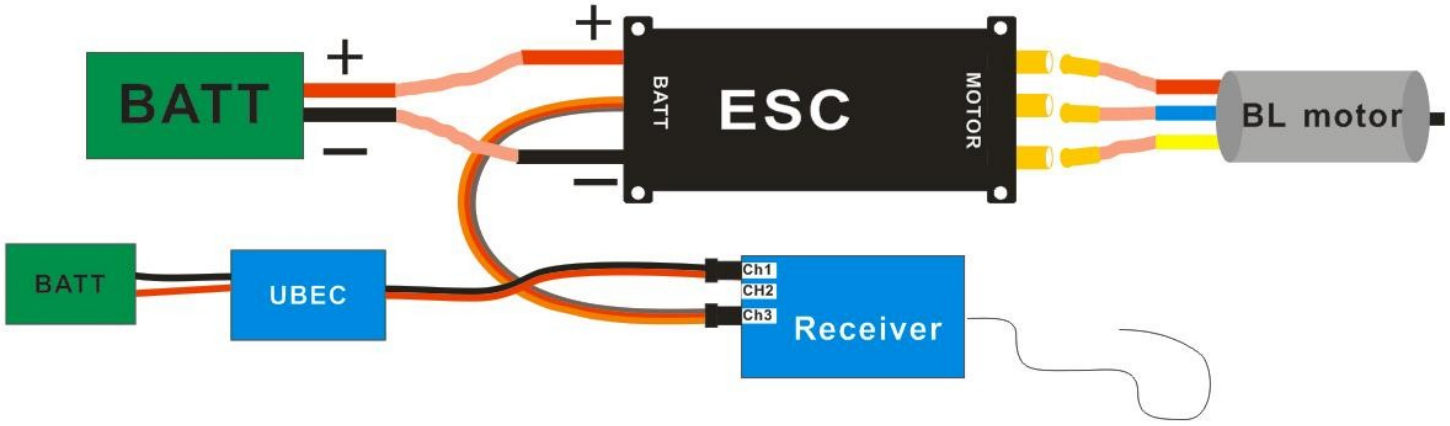
## B. Connect ESC to motor, receiver, battery pack

### *Preparation before connecting:*

1. **Solder three 8.0mm male golden bullet connectors to brushless motor;**
2. **Solder good conductive connectors to battery wires of ESC;**
3. **Prepare a UBEC or a separate receiver battery.**

### *Connecting steps:*

- **Switch 'OFF' the switch;**
- **Connect ESC to brushless motor;**
- **Plug the receiver lead of ESC to receiver (usually CH3);**
- **Connect UBEC or receiver battery to receiver;**
- ***Very important:*** **Connect battery negative polarity to ESC's negative polarity, then put battery positive wire connector touching on the Anti-spark pin for 5 seconds, and then quickly connect it to ESC positive wire while with a little sparks.**



## C. Calibrate throttle travel of transmitter

***NOTE: It is required to calibrate throttle travel of transmitter when first time use the ESC. It's also needed to re-calibrate the throttle after changing a new radio system or upgrade ESC to a new firmware.***

- **Switch 'OFF' the switch;**
- **Correctly connect ESC to brushless motor, receiver and battery pack;**
- **Put throttle joystick to end point to set maximum throttle;**
- **Switch 'ON' the switch, there are two beeps emitted from motor;**
- **Then there are four long beeps emitting out, put joystick to lowest position to set zero throttle.**
- **Then two beeps emitting out, calibration is completed. It's almost ready to fly.**

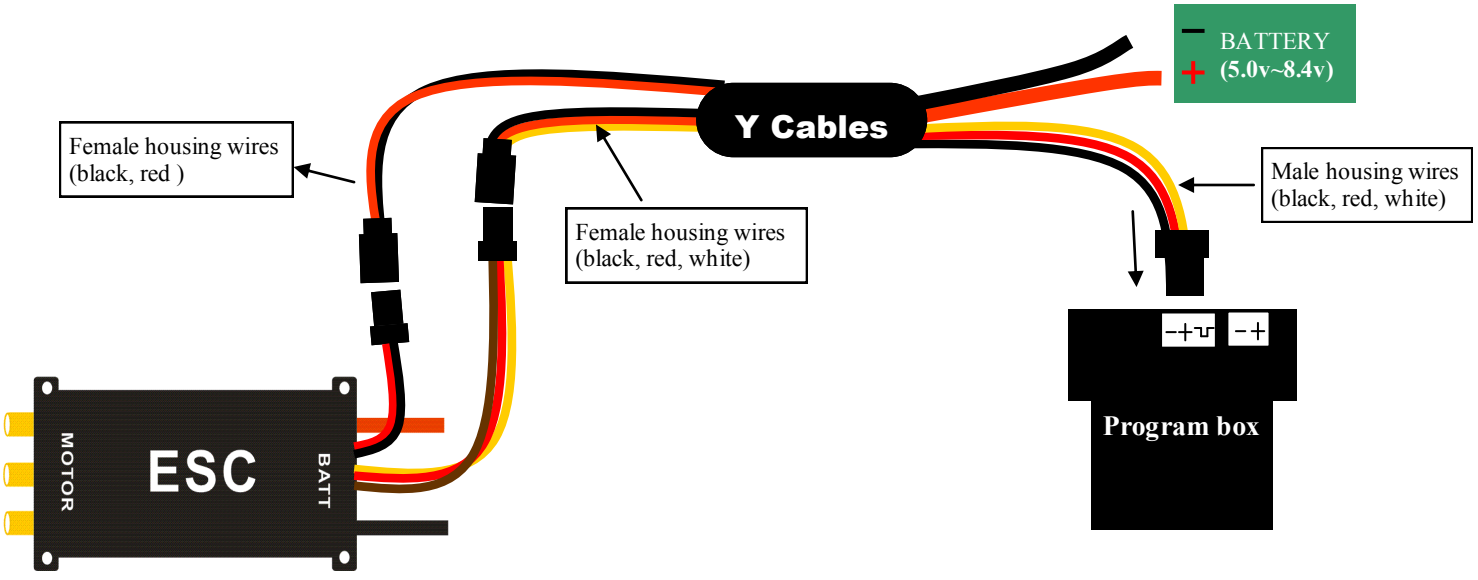
## *IV* Fully program ESC by Program box

**The 300A ESC can be fully programmed by Program box.**

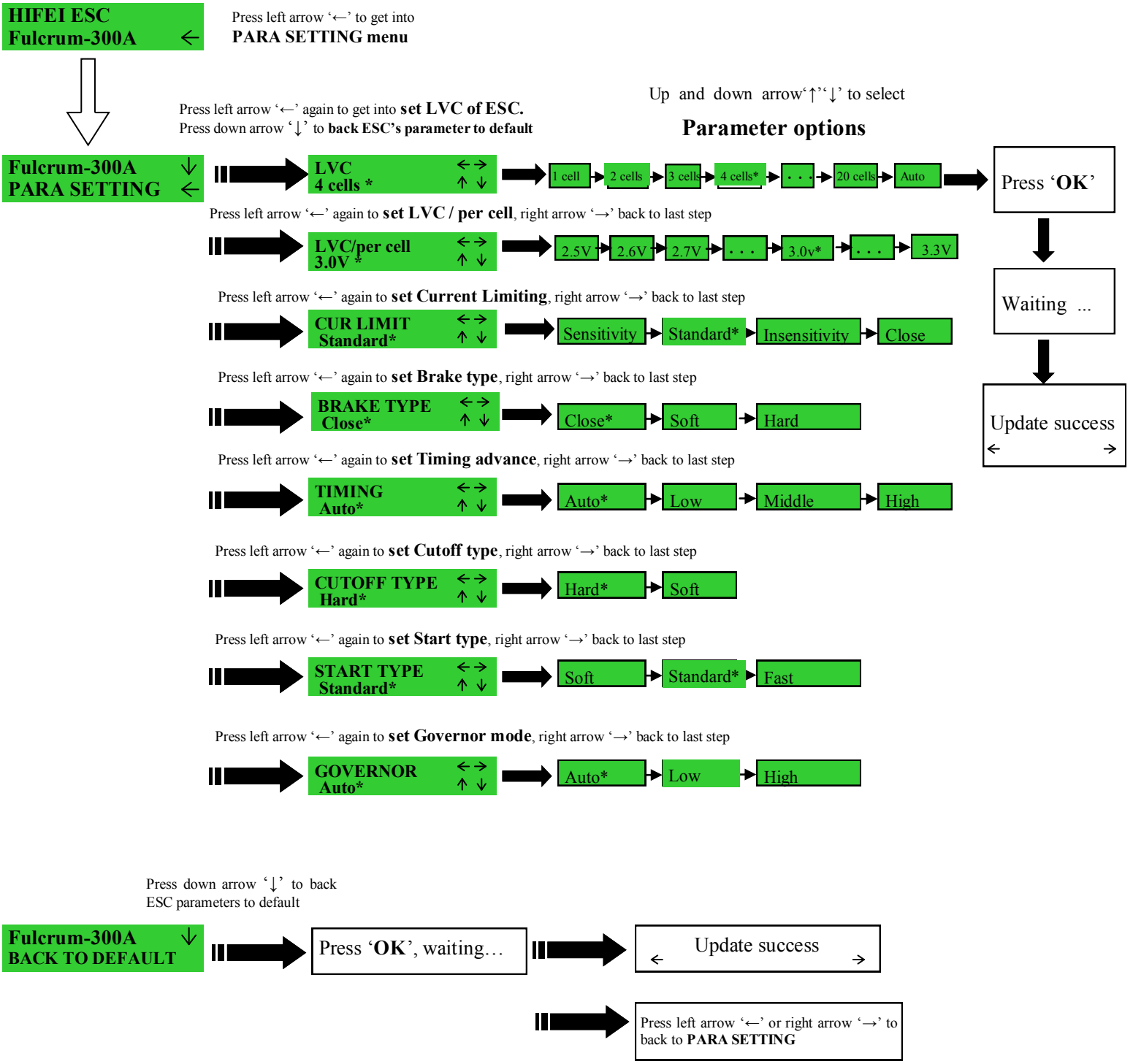
**Because 300A ESC has no built-in BEC, it is need to use an auxiliary "Y Cables" when connect it to program box for fully programming, and a separate battery pack (voltage is 5.0v~8.4v) is needed.**

**Please refer to the following diagram to correctly connect 300A ESC to Program box.**

- Correctly connect the **Female housing wires** (black, red, white) of 'Y' cables to the receiver lead of ESC, and connect the other **Female housing wires** (black, red) of 'Y' cables to the two small wires of 300A ESC.
- Plug the **Male housing wires** (black, red, white) of '**Y**' cables to the left socket of program box.
- Connect the **power wires** of '**Y**' cables to a battery pack (volts at 5.0v~8.4v)
- Switch 'ON' the switch of ESC, Program box will highlight and read out the model of ESC




**NOTE: When connect 300A ESC to Program box, please DO NOT connect ESC to motor and main**




- When finish the programming, switch 'OFF' the switch of ESC and disconnect ESC from program box.

- Connect ESC to brushless motor, receiver, and battery pack. Two power beeps emitting out, it is ready to fly now!

- When ESC is powered, the power LED is lighting until ESC is powered off.
  When ESC is working, the two fans are running to dissipate the thermal heat.