



KISS - Keep it super simple. Manual for the 12A and 18A types

Article includes:

1x KISS 18A ESC, assembled board , bare PCB

Features:

- Developed for Multicopter
- Very small dimensions (12 x 23 mm)
- Precision speed control (about 950 steps)
- no external Cap (electrolytic capacitor) is necessary **
- fast reacting gas change
- linear throttle response
- Active freewheeling enabled (little diode losses resulting in higher efficiency)
- Regenerative braking, therefore quick throttle response when decelerate
- very Fast FET switching through the use of special gate drivers
- Minimal dead by an adaptive dead time
- 2-4S LiPo capable

(**) For very long LiPo power lines (more than 20cm) or to smooth out the supply, a 100 - 220uF Low ESR capacitor can be attached to the Lipo power pads.

Safety instructions:

- For use with LiPo Battery's only! Do not power the KISS ESC's from a power supply. It can destroy the ESC and the Power supply because of the regenerative braking.
- Never start a BLDC motor in you hand!
- Keep some distance to rotating propellers
- Don't Power the ESC if there is no valid signal source connected to it.
- Some parts of the KISS ESC can become hot (up to 80°C) during use.
- Never connect a power source to the ESC while you do solder work on it.
- Some parts on the KISS ESC are electrostatic sensitive. Make sure you are grounded when handling such electronics.

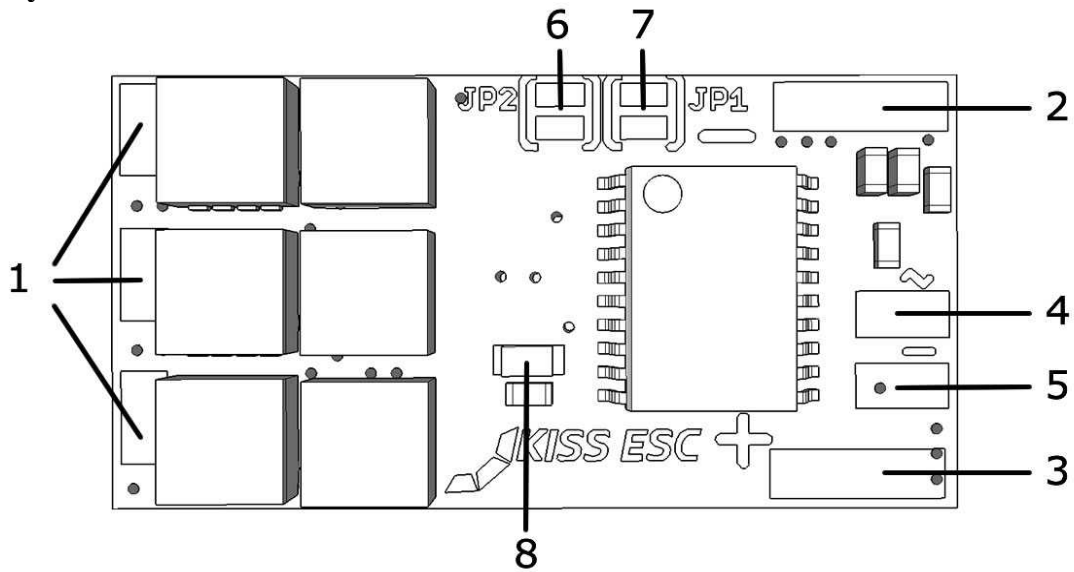
Soldering and Mounting:

KISSes are tiny & sweet, that's why you should handle them with care!

Please inspect the ESCs before and after soldering them. Remains of solder can lead to strange behaviours.

Make sure they are isolated and mounted well so they can't get in contact with conductive materials like screws or carbon parts. Use some clear heat shrink to cover them from moisture and dust.

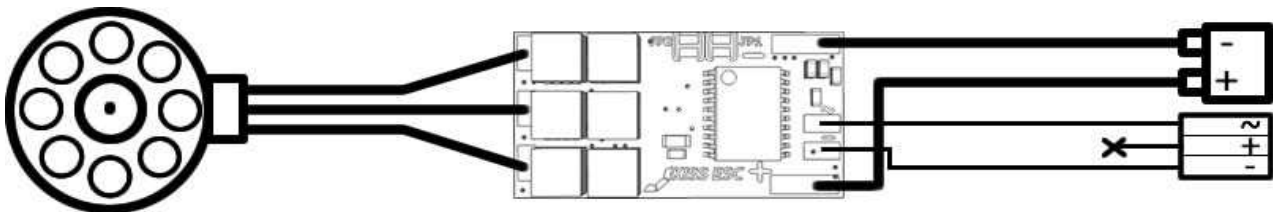
Assembly:



1. Solder pads for the three BLDC motor phases
2. LiPo connection Negative (-)
3. LiPo connection Positive (+)
4. PWM Signal input (Servosignal)
5. PWM Signal ground reference
6. Solder jumper, for changing the rotation direction (CW/CCW)
7. Solder jumper, for changing the PWM input signal type (normal PWM 25-500Hz/OenShot125)
8. State LED

Solder instructions:

- Solder every wire of the BLDC motor to one of the three motor connection solder pads (1)
- Solder the LiPo power Wires to the LiPo power Pads(2 & 3). Attention!!! Make sure you have the right polarity. A wrongpolarity can destroy the ESC and the LiPo battery.
- Solder the signal wires, white wire to (4), black wire to (5).



Programming options:

- A) PWM signal type (7)
- B) Throttle signal range/calibration (Stick programming)
optional: Shock-Flyer 3D Mode (Stick programming)
- C) Motor rotation direction(6)

Attention!!! Never do stick programming with a propeller mounted.

A) Default, the solder jumper 1 JP1 (7) is left open. In that case the input PWM type is also default (50-500Hz with ~1000-2000 μ s signal range). For use with OneShot125 PWM you need to solder JP1 (50-2000Hz with 125-250 μ s signal). The special OneShot125 mode can just be used, if your flight controller supports it. To close a solder jumper, connect both pads of it with solder.

B) to set up the Throttle range disconnect the power source from the ESC, then do full throttle (new max. signal) and connect the power supply. Wait till you hear a single beep. After that beep move the throttle to the lowest signal and wait till the ESC restarts (it will beep “high low high”). This function will work with the most throttle range calibration functions of flight controllers.

Optional: programming the Shock-Flyer 3D Mode.

Attention! This 3D(rotation direction change) mode is made for use with 2S LiPo battery's, and small Shock flyer motors(1806 – 2208 and 1200 – 3000 KV) only. If you use a higher LiPo count, or larger motors you will risk to damage the ESC and/or the motor. The rotation direction change solder jumper JP2 (6) has no effect in this mode.

After Programming the throttle range, you can enable this 3D mode:

Disconnect the power supply and do full throttle. The reconnect the power supply and wait for one single beep. After that beep move the throttle to the middle position. Wait till the ESC restarts. Now the 3D mode is active.

Important! The ESC will now just arm with a neutral middle signal.

To disable the 3D mode, redo the throttle calibration (B)

C) Default, the solder jumper JP2 (6) is open. If you want to change the motor rotation direction, you can close this jumper.

With the Shock-Flyer 3D mode is active, this function is inactive.

Operation:

After supplying power to the KISS ESC the blue LED(8) will light for about 0.5 seconds and you should hear some beeps (high low high). The KISS ESC is now ready. If there is now a valid input signal (zero throttle) the blue LED(8) will stay on and it does another longer beep. Now the KISS ESC is ready to start the motor.

If the Blue LED turns off during use, the throttle signal may be invalid or the motor won't start. Check all connections and redo the throttle calibration in this case

The KISS ESC will beep every 10 seconds, if you left it unused for more than 4 minutes. It is still ready to use. But please disconnect the battery if you don't want to use it for a while.

If the motor becomes stopped during use (blockage), the KISS ESC will try to restart it a several times. If it can't start the motor again, it will disarm to prevent motor or ESC damage. Also in this case it will beep every 10 seconds to help you find a crashed model.

Technical Details:

- Supply voltage 5-17V
- Max. continuous current 12A* or 18A* (depending on the ESC version)
- Max. Burst current (max. 20 seconds) 20A* (KISS 12A) and 30A* (KISS 18A)
- 300000 eRPM max field rotations (the use with up to 270000 is recommended)

(* in moving air.

Error Analysis:

Error:

The ESC does nothing

The blue LED lights up for a second but then nothing.

The motor rotates in the wrong direction

The motor doesn't run well.. it just makes noise

Solution:

Check the power supply (LiPo Wires 2 and 3), is the LiPo battery connected?

1. check the signal wires (4 and 5)
2. recalibrate the throttle range

Open or close the solder jumper JP2 (6) or change the connection of two of the three motor wires.

Check the three motor wires some motors have painted wires they are hard to solder.