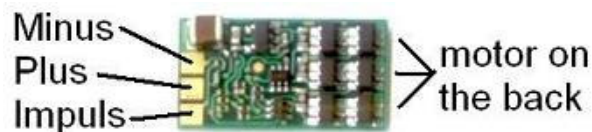


0,7 Gramm electronic speed controller YGE 7 S (ESC)

Technical data:

- Max. 7A continuous, without heat shrink tube and good cooling in the airflow.
- Use for 1S or 2S LiPo*
- Automatic cell count recognition.
- Under voltage protection by power reduction.
- disconnectable under voltage detection.
- Speed regulation (Governor mode).
- adjustable Soft start.
- Automatic or 6 step adjustable timing.
- 3 steps adjustable back EMF brake.
- Switching rate: 8 to 16 kHz
- Speed limit: 240,000 RPM (2-Pole motors)
- Dimensions: 11 x 20 x 3 mm
- Weight without wires 0.7g
- Programming with stick setup, check www.yge.de
- Programming with the ProgCard II or III



Initial setup:

After connecting the battery you hear 3 descending tones. Subsequently, follows a number of beeps according to the cell number of the connected Lipo battery. In case the transmitter stick is in throttle off, you hear now 3 ascending tones.

You need to connect the motor to hear the beeps, as it is the motor itself which acts as a speaker.

-- The ESC is ready for use. ---

If the motor turns in the wrong direction, exchange simply 2 of the 3 motor wires.

In case you get inadvertently in the programming mode during a normal start-up (throttle stick at full power), simply disconnect the battery, lower the stick to stop, and connect the battery again. Thus you won't modify the adjustments.

Warning:

Inverting the Battery polarity leads to heavy damage and to the loss of warranty!!!

To get into the RC-setup of the YGE 7S, it has to receive a full throttle signal at power up. But, as, during the whole power up phase of some receivers is sending a stop signal without relation to the stick position, this is not possible. Therefore you have to disconnect the ESC before binding, and reconnect it once the binding is finished, while giving full throttle.

Warning:

* With use of 2S lipo, the whole RC gear will be operated with full 2S voltage. Therefore, you should use only components certified for at least 7.4V operation.

The battery is connected, **under polarity control**, directly to the receiver or on the plus and minus pins of the ESC.

New generation receivers are generally allowed up to 9V, and some servos like the FS31 from Robbe or the Dymond D47 can also be operated directly with 2S lipos.

General Settings:

The speed controller has a fixed throttle curve setting, so that with all usual transmitters the stop and full power points are linearly connected. With all programmable transmitters, the throttle range should be set to default ($\pm 100\%$), the center point set to zero and throttle trim enabled. Nevertheless, with some transmitter types the range needs to be adjusted. For that the throttle endpoints have to be set so that one notch before lowest stick position the motor is stopped and that one notch before full power the motor is actually at full power. Full power is indicated by the LED that is completely turned off.

On delivery the Timing is adjusted to 18°, brake is disabled, and the under voltage recognition adjusted to Lipo mode 3.0 V.

If during spin up rpm variations (wowing or erratic sound) are experienced, the timing must be increased. If no improvement can be obtained at 30°, then the motor is overloaded. Here a smaller propeller or a stronger motor will help.

If after motor stop you hear 2 beeps repeating, it means that the battery voltage dropped down below the setting value. Eventually try a cutoff voltage of 2.9 or 3.0V per cell. If there is still no improvement, then the battery is discharged or too weak, the wires are too long or too small or a connector is out of order.

With an active brake you can hear these warning tones only in windmill position. This is the small range on the throttle stick between brake and motor start. You can reach this position with 2 notches or with a high trim and a short gas start.

If no automatic timing is wished, it can be adjusted according to the following guideline.

Inrunner	0 to 12°
Outrunner	18 to 30°

If your motor manufacturer gives a timing recommendation, it is of course preferable to use it.

Basic rule: the higher the timing the higher the full power rpm.

The easiest to make these changes is the ProgCard II. There is also the possibility to perform the setup with the

transmitter; however it will not be explained here. You will find it in the RC-setup manual under www.yge.de in the Download area.

Please notice that the complete features set can only be reached through the ProgCard II.

In case you get inadvertently in the programming mode during a normal start-up (throttle stick at full power), simply disconnect the battery, lower the stick to stop, and connect the battery again. Thus you won't modify the adjustments.

Setup for Helicopters

For helicopters in governor mode, the full throttle range (100%) must be calibrated once. For some transmitters, this range is indicated in the helicopter menu (throttle curve 0-100%). This throttle curve will then correspond to the controller throttle from 0 to 100%. Please refer also to ProgCard or RC-Setup manual.

When activating one of the governor modes, all relevant heli parameters are set to default. This default will fit nearly all setups. **You don't need to program further at a first step.**

Here a listing of the default settings.

- Timing = 18°
- Brake off
- Act. Freew. on
- P-Gain = 0.9
- I-Gain = 0.05
- Startup Speed = Heli middle
- PWM-Frequency = 8 kHz)
- Startup Power = Auto 1-32%

You should modify the default settings of P-Gain, I-Gain and PWM frequency, only if you don't get the desired success, and if you are sure of the correct setting of all other components.

Warning for Heli pilots

It is important for autorotation trainings not to reduce the motor to 0! Not doing so will result in a soft start when you interrupt the autorotation, and may end with a real autorotation... The motor has to have a certain rest speed that should be the speed where the helicopter just cannot take off with. If it is too low it can result in an overload of the motor when reaccelerating. Nevertheless, the motor cannot, after an autorotation interruption, reengage with full power. Thus it is recommended to keep some safety height. On the other hand, be sure to stop the motor when landing and starting over to activate the soft start.

Lipo protection / under-voltage protection:

Because of the tension driven load adjustment it is possible to fly further with low power, since the battery recovers with smaller load. However, if the tension continues to break in, the motor is switched off.

Caution:

Fundamentally it is important to make sure that no objects are within the propeller circle when batteries are connected. The use of this speed controller is therefore allowed only in situations where damages and personal injuries are impossible. A damaged governor (e.g. broken, damaged by polarity inversion or humidity) must not be reused under any circumstances. Otherwise it can come to a later malfunctions or failures.

The ESC may only be powered from batteries, a use from power supplies is not allowed.

Trouble shooting:

- 2 Beeps/flashes: Under-voltage identification
- 3 Beeps/flashes: Temperature rise warning
- 5 Beeps/flashes: Receiver signals failed
- 6 Beeps/flashes: start up failed

The ESC signals any error that happened during flight acoustically (motor) and optically with a blinking LED code. After a power cycle the error conditions are reset.

Warranty:

We give 6 months warranty on this speedcontroller. Any other requirements are excluded. That applies in particular to requirements for damage or injuries compensation due to malfunction or failure. For damages to property or personal injuries and their consequences, which developed from our supply or craftsmanship, we do not take any liability, since we have no control on handling and use.

