

Speedcontroller YGE Opto 255

Technical data:

- Continuous current 255A (Full throttle). Max. acceleration current 400A.
- Adjustable current limit up to 400A. The ESC won't shut down, it will limit the current to 400A.
- 6 to 16s LiPo, max. terminal voltage 68V, nominal operating voltage 63V.
- over 14S all-insulated and touch-proof connectors must be used.
- pluggable receiver- and telemetry cables
- All signals are isolated by optocouplers for best noise immunity.
- Electronic speed control (Governor- mode)
- Soft start
- Active free-wheel, allowing unlimited part load operation.
- Automatic or 6 step adjustable timing
- Frequency: Automatic.
- Adjustable EMK brake
- F3A(Acro brake (brake force control infinitely adjustable)
- Speed limit: 240.000 rpm (2- Poles)
- Temperature and overload warning
- Anti- flash: decreases the closing spark.
- Basic -Programming with mode programming
- Fine adjustment and selection of telemetry with the PC Setup. Suitable USB-adapter optionally available
- Dimensions in mm: 119 x 54 x 31
- Weight with all cables: 365g
- Cable diameter battery / motor: 8² / 8²

We point out that the mode-setup has to be successfully done before using the controller!

**For Navy please always choose mode 5.
It is also possible to set the half throttle way.**

**For LMT inrunners, the following settings are Necessary:
Initial torque → Normal**

If you are using a Futaba transmitter, please Set the framerate to 14ms (analog).

Start-up:

After connecting the main battery you will hear 3 descending beeps. You need to connect the motor to hear the beeps; whereby the connected motor acts as a beeper. A number of beeps will follow according to the number of cells; a long beep stands for 5 cells and a short beep for one cell.

Example: long...long...short...short - 5 + 5 + 1 + 1 =12 cells. If the transmitter is now in the correct stop-position, you will hear 4 ascending beeps.

- The controller is now ready- .

If the motor turns in the wrong direction, it can be reversed by exchanging 2 of the 3 motor wires.

Use only clean and tight gold connectors for the motor and battery. The 5,5mm or 6mm gold-connectors have proven to be the best choice. Exchange low-friction - or oxidized plugs and sockets. Because only tight sitting contacts will ensure a high current flow, protect the speed controller against dangerous voltage peaks and avoid disturbances.

The entire wire length, from the controller to the battery, may not exceed 30cm. If longer wires are necessary, more switch resistant additional capacitors have to be used (Ultra Low ESR). We recommend our capacitor module YGE Cap's 9. Longer motor cables can be used. Twist the three cables in order to minimise interference emission.

Attention:

Inverting battery polarity leads to severe damage and loss of warranty!

Mode Programming:

1. For safety reasons remove ALL rotor blades!
2. Switch on the transmitter and move the throttle stick to maximum (100%).
3. Connect the battery to the ESC → wait for the interval beep: ♪♪♪ ... ♪♪♪ after 20 beeps the setup menu is entered: confirmation ♪♪ .
4. Move the throttle stick to minimum and choose the mode:

♪	Vbar - gov	Mode 1
♪♪	Gov - mode	Mode 2
♪♪♪	Gov - store	Mode 3
♪♪♪♪	Glider with folding propeller and brake	Mode 4
♪♪♪♪♪	Navy / Motor plane without brake	Mode 5
♪♪♪♪♪♪	Motor plane with F3A brake	Mode 6

5. At the desired mode, move the throttle stick to maximum: confirmation ♪♪.

If no mode has been selected, the mode programming starts again with mode 1 = Vbar - gov, etc....

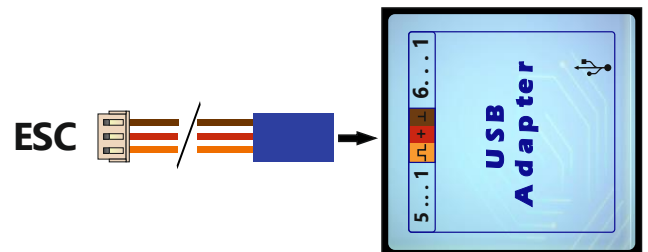
6. Once a mode has been selected, move the throttle stick to minimum: confirmation ♪♪.

You will hear the beeps acc to the number of cells and now the ESC is armed and ready for use.

- THE END -

PC-Software:

In the mode-programming, all parameters are set automatically to useful values. We recommend to set as less as possible in the PC-Software. Usually it is enough to set the telemetry-settings, if necessary. For programming with the PC-Tool, the optional USB-Adapter is necessary. Please use the attached 3-pin telemetry-cable (Not the telemetry cable!) with the blue JR-plug for connecting the ESC to the USB-adapter. More informations in the manual of the USB-adapter.



Lipo protection / under-voltage protection:

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

Active free-wheel:

The unlimited partial load capability refers to the maximum full power current of the respective ESC types.

Temperature / overload warning:

If the speed controller's temperature exceeds its limit, because of overloading or lack of cooling, after landing and/or motor stop, a warning signal is issued (3 beeps in the interval). But the motor is not switched off in flight! Only when the temperature reaches an extremely critical level, rpm will be reduced to 70% of the current power.

The partial load operation between half and nearly full power is the most difficult area for an ESC. In addition the running time becomes longer and longer with the Lipo technology. If it comes to repeated temperature warnings, better cooling should be provided or the current should be reduced.

These warnings are to be regarded as overload warnings and **not as normal operating condition**. At high temperatures the components are very stressed and this leads to a decreased service life.

You achieve better cooling not only through sufficiently dimensioned air intake, but even more efficiently through a larger air outtake, in order to avoid heat accumulation. You achieve smaller currents by using a smaller propeller or a battery with one less cell.

Caution:

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 controller (e.g. broken, damaged by polarity inversion or humidity) must not be reused under any circumstances. Otherwise malfunctions or subsequent defects may arise at a later date.

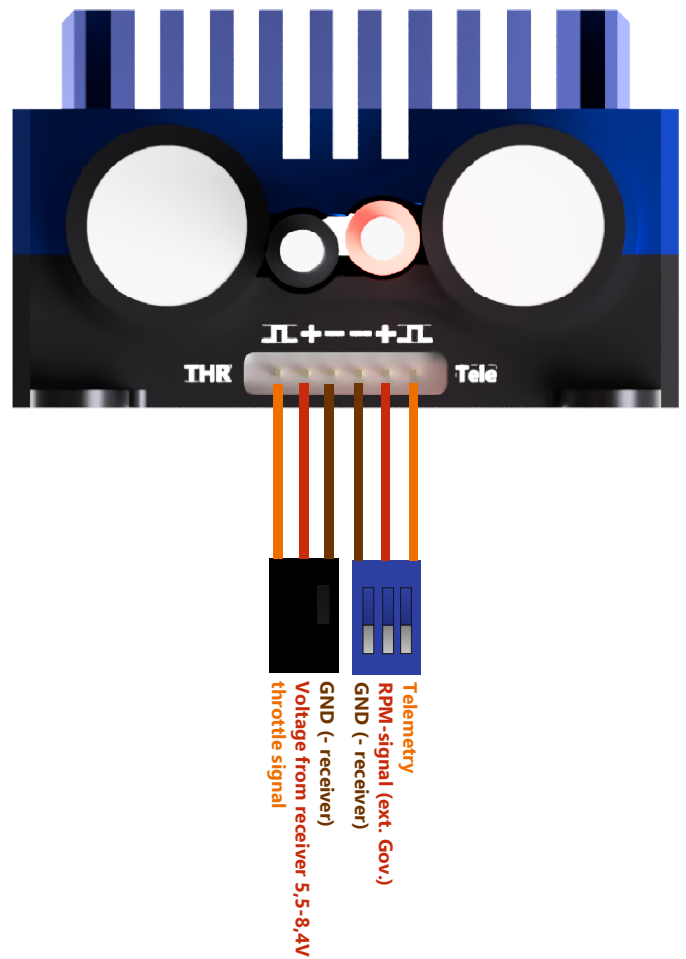
The ESC should only be powered by batteries, the use from power supplies is not allowed.

Analysis of malfunctions:

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

The ESC has a yellow LED - status indicator light as well as a red LED light to analyze error. A flashing sequence indicates errors during operational use. After about a 1 minute successful run the error will be automatically deleted.

Connections:



Telemetry:

If you use a backup-battery, please make sure, that you power up the ESC first, before connecting the backup-battery to the receiver. Otherwise the telemetry might not work. The ESC sends all ESC-related data via telemetry, such as voltage, current, capacity, BEC-voltage, RPM, throttle percentage, PWM, BEC-temperature, warnings and error messages. It depends on the used receiver and transmitter, which of these data will be shown in the transmitter.

YGE (preprogrammed):

The YGE-protocol is for example for use with **YGE TexY** (Futaba, Spektrum, FrSky, Core), MSH Brain 2 or Spirit FBL.

Warranty:

Our warranty conditions are based on the European Statuary Warranty. 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.

YGE - Young Generation Electronics
Otto-Hahn-Str. 1A
49134 Wallenhorst
Germany

