

## **Tsunami 10 Controller for Brushless Sensorless motors (released after October 1<sup>st</sup> 2004)**

### **User manual - RC-Setup description.**

The setup mode is started when the ESC receives pulses longer than 1.5ms (full throttle) for 5 seconds right after switching on.

- Switch on transmitter , Full Throttle
- Switch on receiver and ESC
- After 5 seconds you'll hear a fading 3 beeps (NiCad/NiMH). When you use Lithium Polymer cells wait another 5 sec until second 3 beeps.
- Move Throttle to off position .Wait until you hear the mode you want to select.  
When you want to use Mode 1, wait until you hear 1 beep. (Mode 2, 2 Beeps etc...)
- Immediately move stick to the full throttle position wait for 1 beep (storage of full Throttle and Mode settings).
- Now move the throttle to your desired start position ( Normally the OFF position)
- You'll now hear confirmation of Mode ( 1/2/3/4 beeps) and than 3 fading beeps to confirm storing of settings.

mode	A/C type	Brake	Soft start	Over Temp protection	Throttle Down on low voltage	Motor Stall Protection	RPM control	RPM Limitation
1	E-Sailplane	Medium	On	On	On	On	Off	On
2	Motor model	Off	Off	On	On	On	Off	On
3	Heli	Off	On	Off	Off	Off	On	Off
4	Contest mode	Hard	Off	Off	Off	Off	Off	Off

**In Heli mode you must set a desired RPM at a desired stick position. The ESC needs to know the max RPM under load. This information is gathered during the first run after setup. The ESC now knows the Maximum RPM and will save this setting. Half of the throttle throw is also half the RPM etc.. (Setting the RPM to high can overload and damage the ESC. Read warranty note )**

NOTE: If you wish to change the settings repeat above procedure.

After switching on the ESC you always hear.

- One beep Setup for NiCd- or NiMh-Packs, or
- two beeps for LiPo's

When the ESC receives a correct signal from the receiver and the transmitter has the throttle in the off position , you'll hear a activation signal.

An optional PC-interface cable is available from dealers, with this cable more settings are available e.g. fixed timing, hard/medium/soft brake and low-voltage protection.

**DATA:** Cells : 6 – 10 Cells ( 2 – 3 Lithium Polymer), Max. Amps 10A. Servos : 4

### **WARRANTY:**

The Tsunami-10 has a 1 year limited warranty against failure.

All modes where the temperature control is disabled are not covered by warranty

Reversed polarity of batteries is also not covered.

If an ESC breaks down we can measure /read out the last settings in the micro-processor so we can tell what mode was used and what were the settings.

Removing the shrink tube or soldering of any nature will also void warranty.

Using the PC- interface cable/ program is also not covered under this warranty.

### **Safety Precautions:**

Always read the instruction first supplied with your equipment used in conjunction with this ESC. Always stay clear from a rotating Propeller, rotating propellers can cause great harm, body injury, death or property damage. Never run a motor while holding in your hands always use a Jig or mounting bracket when you want to test run a motor.

**Please use common sense**

High-End Technology Holland BV assumes no liability for the operation or performance of this product. It is the responsibility of the operator to use this product in a safe and responsible manner.

**Manuals can be downloaded from <http://www.het-rc.com> (use the right manual for a particular product)**