

Free-Flight Motor-Run Timer

Stevens Aeromodel · Version 1 board · Firmware v1.0 · Made in Colorado, USA

▲ READ FIRST

5 VOLT BEC MAXIMUM. NO EXCEPTIONS.

- **Whenever a battery is connected, assume the motor can start at any instant.** Once the timer is ready, **one press and release starts the motor**. Keep fingers off the button and hands clear of the propeller until you launch.
- **Keep the battery disconnected** while transporting and handling the model; disconnect it as soon as you retrieve the model. **Remove the propeller** for throttle adjustment, practice, and the first run with any new ESC or motor.
- **This timer runs the motor; use it alongside your usual dethermalizer.** Fly only where the model can come down safely. **Never fly near power lines, roads or people.**

DISCLAIMER. Free-flight model flying is potentially dangerous and can cause serious injury, death or property damage. Stevens Aeromodel has no control over the installation, programming, maintenance or operation of this product and accepts no liability of any kind arising from its use. By using this timer you accept full and sole responsibility for the safe operation of your model and for the safety of yourself, bystanders and property. If you are unwilling to accept that responsibility, do not use this product.

THEORY OF OPERATION

The timer plugs into your ESC's servo lead, runs the motor for a **stored** time, then winds it down into the glide. The **button** sets the time, launches and stops; the **trimmer** sets power. On power-up it commands **motor off**, so your ESC arms normally.

POWER-UP SEQUENCE

Every time a battery is connected. **Each step is separated by a 2 s dark pause.** Presses are ignored except in the change window.

Step	Length	LED	What it means
Start	2 s	solid	Timer is alive.
Time playback	varies	slow blinks, then quick flickers	The stored run time — slow blink = 10 s, quick flicker = 1 s.
Change window	3 s	rapid flash	Press now to change the time. Otherwise let it pass.
Ready	—	double-blink	Ready to launch.

What a flight looks like

Phase	Length	LED	What's happening
Ramp up	1 s	slow flash	Power rises quickly to your trimmer setting.
Motor run	your time	SOLID	Power at the trimmer setting.
Run-down	5 s	slow flash	Power fades gradually to prevent a power-off stall.
Locked	—	short blink every 3 s	Motor off. Button disabled until the battery is reconnected.

Total motor time = stored time + 6 s (1 s ramp up, 5 s run-down). Factory setting 10 s = 16 s of motor.

LAUNCHING

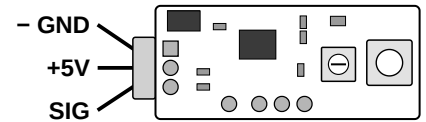
Wait for the **double-blink**; earlier presses are ignored. **Tap launch:** press and release, then launch as the motor spools up. **Grip launch:** hold the button in your grip (LED solid, motor off) — the motor starts the instant you let go of the model. **The motor starts on release, never on press.**

EMERGENCY STOP

One press during the flight stops the motor immediately. The timer locks until the battery is reconnected.

CONNECTING

The timer plugs into your ESC's servo lead. **Board shown life size** (15 × 35 mm), viewed from the component side. Pin 1 (ground) is the square pad. Mount it where you can reach the button with the model in your launching hand, and see the LED.



SETTING THE RUN TIME

Propeller off, or the model firmly restrained — the motor gives a brief blip on each 10-second press.

1. Connect the battery. Watch the playback, then **press and release once during the rapid flash**. The LED goes **dark**: the timer is listening. This press adds nothing.
2. Enter the time in any order:
 - **Tap = +1 second**. The LED flickers once.
 - **Hold until the LED lights and the motor blips**, then release = **+10 seconds**.
3. **Stop pressing**. After 2 seconds the time is saved and played back.
4. Then the rapid flash returns. **Wrong? Press and enter it again**. Right? Let it pass and the timer becomes ready.

Every entry **starts from zero** — enter the whole time, not a change. Range **1 to 99 seconds**. If you open the entry and press nothing for 5 seconds, the old time is kept.

Reading the playback: slow blinks (10 s each), a pause, then quick flickers (1 s each); a zero is left out. 10 s = 1 slow blink (factory setting). 25 s = 2 slow, pause, 5 flickers.

Example settings

You want	Holds (10 s)	Taps (1 s)	Motor runs
8 s	0	8	14 s
15 s	1	5	21 s
99 s (max)	9	9	1:45

SETTING THE THROTTLE

Remove the propeller from the model before making any throttle adjustment. Use a small flat screwdriver on the **trimmer**. Clockwise delivers more throttle.

- **Do not force the trimmer past its physical stops.** It is a single-turn part and turning against the stop will damage it.
- **Full sweep is 0–100% power.** Fully counter-clockwise the motor won't run. Trim at low power first.

ESC CALIBRATION

Perform only if the motor won't arm, or to fine-tune trimmer travel. Propeller off and model restrained.

1. With the timer **disconnected** from the ESC, first connect the battery to the ESC.
2. Then, **while holding the button on the timer**, connect the timer to the ESC. Keep holding (LED **solid** = full throttle).
3. Once the ESC recognizes the high point, **release the button**. Throttle drops to stop, the ESC recognizes the low point and arms, and the timer runs its normal power-up sequence.

TROUBLESHOOTING

Symptom	Cause and fix
ESC beeps continuously, won't arm	Run the ESC calibration above. If it still won't arm, check your BEC is 5 V.
Nothing at all — no LED	Check servo lead orientation and that the BEC is live. Reverse polarity blocks power harmlessly.
Short blink every 3 s, button does nothing	Locked after a flight or emergency stop. Reconnect the battery.
Launches but the motor never runs	Trimmer is fully counter-clockwise. Prop off, turn it up.