



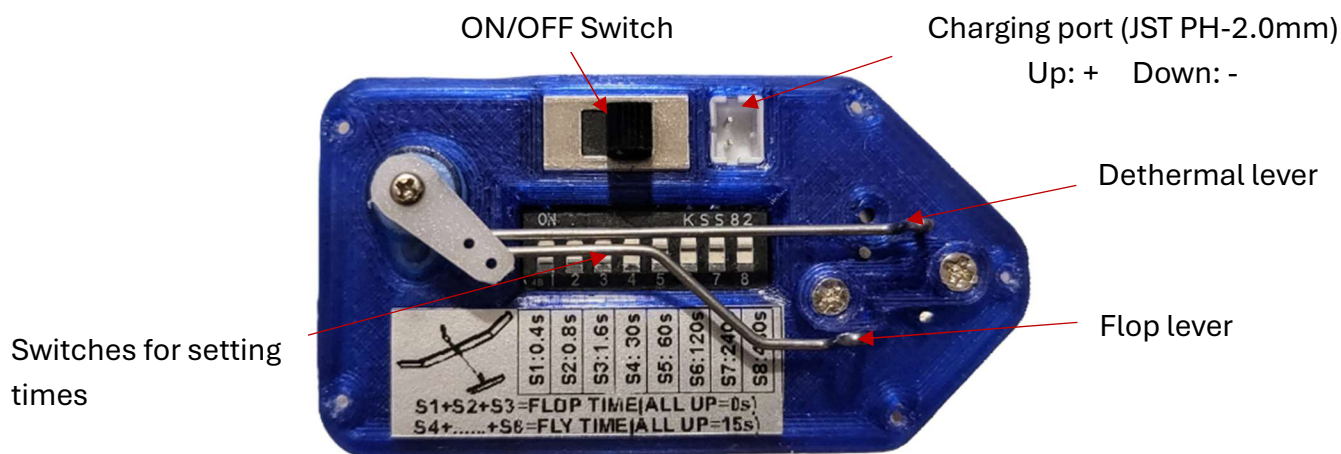
ELECTRONIC TIMER FOR F1E GLIDERS WITH AUTOMATIC STEERING



The timer is designed for freeflight models gliders with automatic steering F1E or other models released from the hand. It is used to count down the flight time, after which the mechanisms should cause the model to fall freely for safe recovery. It has been designed in such a way that programming the times is as simple as possible, especially with juniors in mind.

Specyfikacja:

- Dimensions: 64x34mm
- Weight: 18-24g (waga bez akumulatora)
- Number of functions: 2 functions (flop, deter)
- Connectors:
 - 1x servo
 - 1x RDT
 - 1x buzzer (requires buzzer with built in generator for 5V voltage)
 - 1x LED (max 3W, recommended 1W)
 - 1x battery charging port (requires a JST PH-2.0mm plug)
- Power supply: **Li-Pol 3.7V 1S** (capacity as desired, recommended min. 200mAh; The battery must be with a Molex 51005 plug)
- Protection against releasing the model without pressing the start button



Setting time of flight:

The flight times are set using 8 switches located on the front of the clock. Each switch set down is responsible for setting a specific time. When multiple switches are turned, their times are added together and their sum will be the flop and flight time

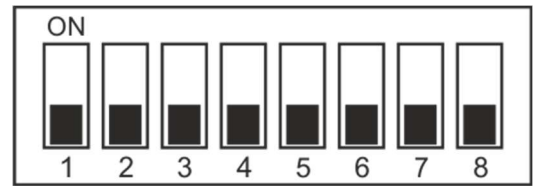
- Flop times: 0.0-2.8sec with 0.4sec increments
- DT times: 15sec i 30-930sec with 30sec increments

Switches form 1 to 3 are responsible for setting the flop times

- Switch 1 – 0.4sec
- Switch 2 – 0.8sec
- Switch 3 – 1.6sec

Switches form 4 to 8 are responsible for setting the DT times

- Switch 4 – 30sec
- Switch 5 – 60sec
- Switch 6 – 120sec
- Switch 7 – 240sec
- Switch 8 – 480sec

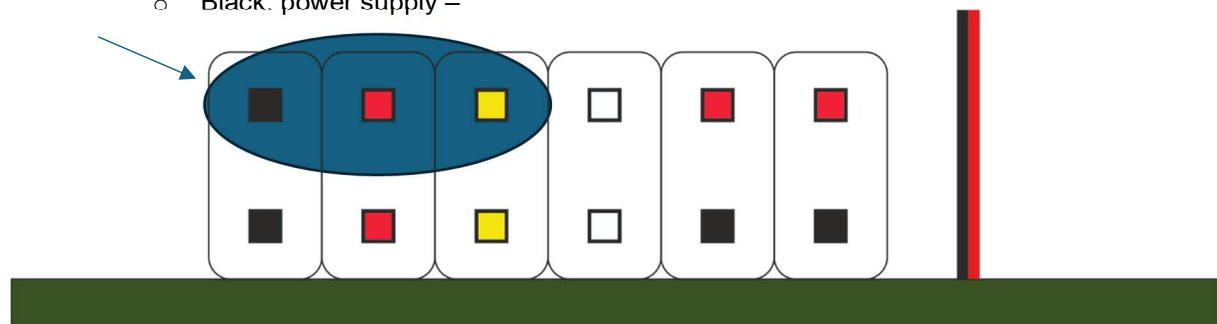


The flop time is set by moving switches 1 to 3 down. For example, setting switches 1 and 3 will give a flop time of 0.4sec + 1.6sec what gives 2.0sec, moving 2 and 3 will give a flop time of 0.8sec + 1.6sec what gives 2.4sec, if all switches are set down, the time will be 0.4sec + 0.8sec + 1.6sec what gives 2.8sec. Setting one switch down will only set the time that corresponds to the given jumper. The general pattern for the set time is $\text{Switch1} + \text{Switch2} + \text{Switch3} = \text{Flop Time}$.

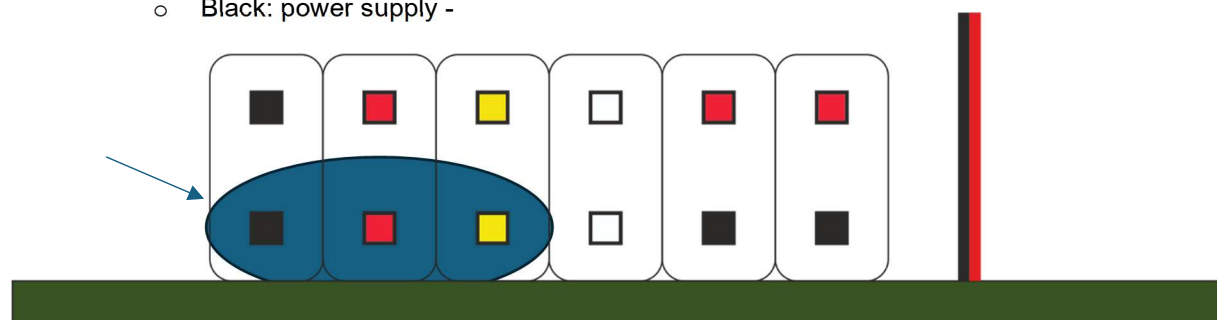
Dethermal time is being set similarly to flop time by adding switches from 4 to 8. The general pattern for the time is $\text{Switch4} + \text{Switch5} + \text{Switch6} + \text{Switch7} + \text{Switch8} = \text{Dethermal Time}$.

Connectors

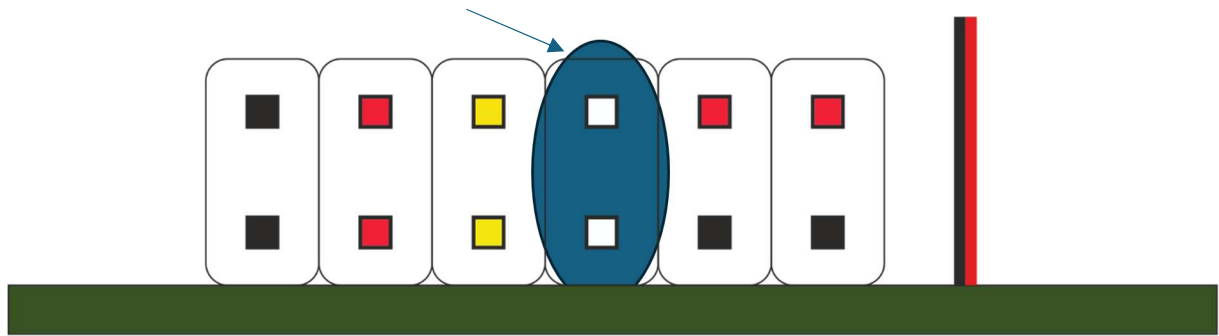
- Servo connector:
 - Yellow: PWM signal
 - Red: power supply +
 - Black: power supply –



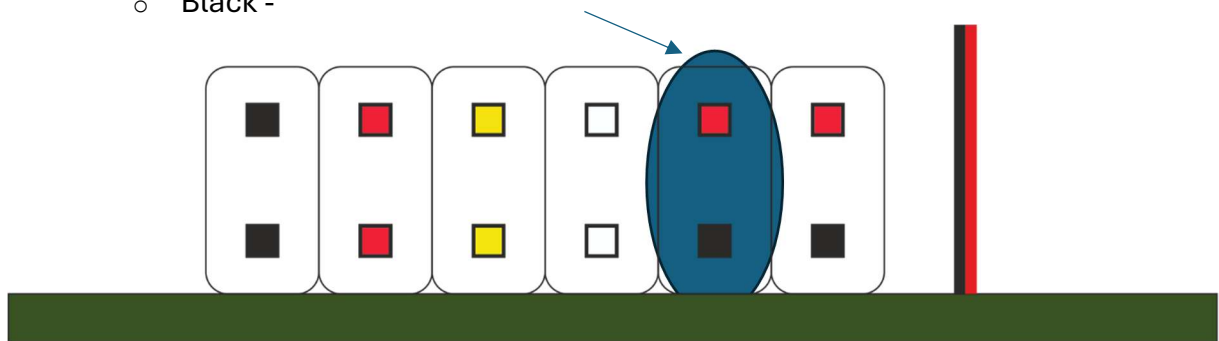
- RDT connector
 - Yellowy: high or low signal
 - Red: power supply +
 - Black: power supply -



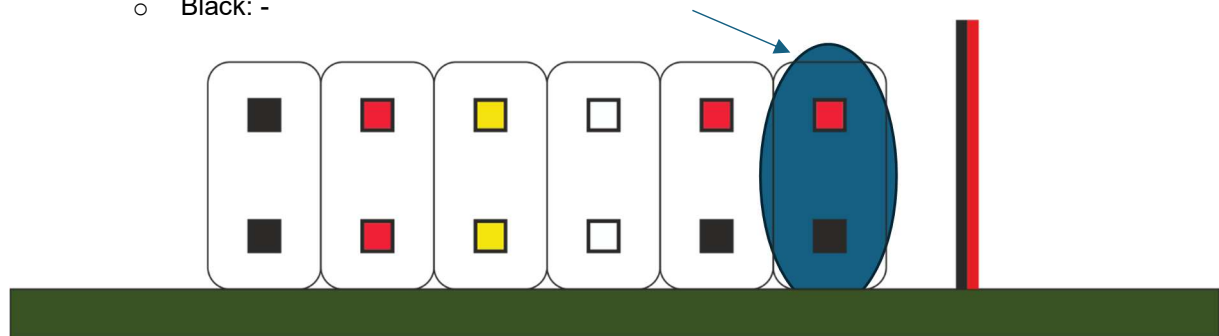
- Start button connector (polarization doesn't matter)



- Buzzer connector
 - Red: +
 - Black -



- LED connector
 - Red: +
 - Black: -

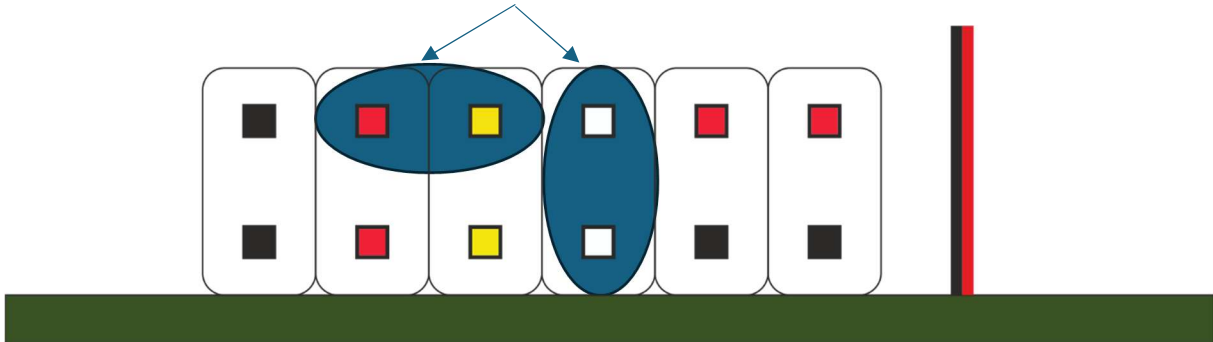


Protection against releasing the model without pressing the start button

The clock has a protection against releasing the model without pressing the start button. From the moment the clock is turned on, the clock counts down 5 minutes (300 seconds). If the start button is not pressed by the end of this time, the servo will automatically set itself to the dethermal position. If a buzzer is connected to the model, it will give a sound signal every 30 seconds informing that the clock is on and the button is not pressed. If the start button is pressed, it gives a continuous signal until the model is released.

Servo movement revers

If the connected servo rotates in a different direction than it should, you can set its reverse (opposite direction of rotation). To set the reverse, you need to disconnect the servo, short-circuit the servo signal pin (marked in yellow on the graphics) with the power pin (marked in red on the graphics) and press the start button, then turn on the clock with the pin shorted and the button pressed. After about 2 seconds, you can turn off the clock and connect the servo (without the jumper on the signal pin). The servo should rotate in the opposite direction.



RDT

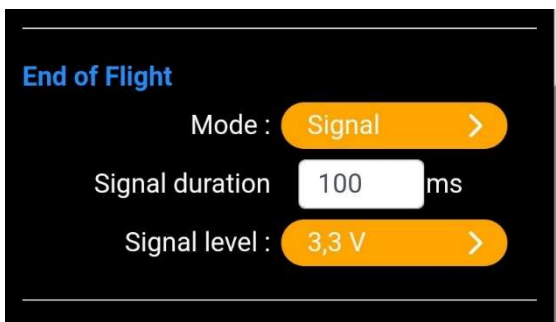
The clock can work with most available radio dethermal systems controlled by high and low signals. It was tested with RDTs from two manufacturers.

- Leo Bodnar RDT (no longer in sale)



- MiniNeuron GPS & RDT firmy FlyingNeurons (www.flyingneurons.com)

MiniNeuron settings for the timer



INCLUDED

- Timer
- Start button
- JST PH-2.0 charging cable

If you have any problems or questions, please contact:

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