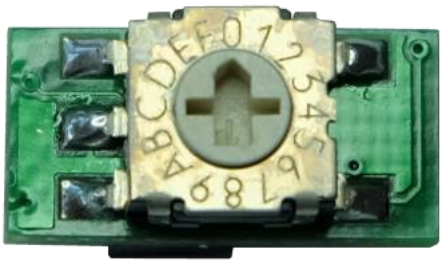
RC F1H

Electronic timer with pre-programmed times for F1H planes



Manual version: 1.0

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Introduction

RC F1H was designed to replace mechanical timers in free flight models. It was designed for F1H category. This electronic timer provides precise timing to activate dethermalization. For advance users each preset time can be preprogramed on field and also servo min/max position can be programmed.

How it works

On RC F1H, there is a rotary switch with 16 positions. After power ON, servo lever goes to start (max) position, beeper makes a short beep and starts to count down time until it runs out. User can select one of pre-programmed times with rotation of rotary switch and that time will start to count down after reset button is pressed. Each time reset button is pressed, the count down time will reset and a short beep will be heard. Device will wait until reset button is released and then it will start count down again from beginning. After time out, servo lever goes to end (min) position and waits there until reset button is pressed. All that time beeper makes beeping sound for easier location of the plane if it is lost. When reset button is pressed, servo lever goes to start (max) position again and selected time starts to count down again.

Key features

- Small and lightweight at only 1 gram.
- 16 pre-programmed times.
- Precise timing.
- Low price.
- Low input current
- Onboard beeper for easier search of the plane.

Specifications

Board Dimensions	15 mm x 8 mm x 7 mm 0.55” x 0.35” x 0.28”
Weight	1 gram
Input Current (without servo motor)	~5 milliamps, 55 milliamps when beeping
Temperature Range[1]	-10°C ~ +60°C
Input Voltage Range	2.7 – 5.5 volts DC

[1] Specifications are taken from component ratings and system limits and may not have been tested to the full extent of the specified ranges.

Physical overview

Figure 1 shows how to connect the RC F1H module.

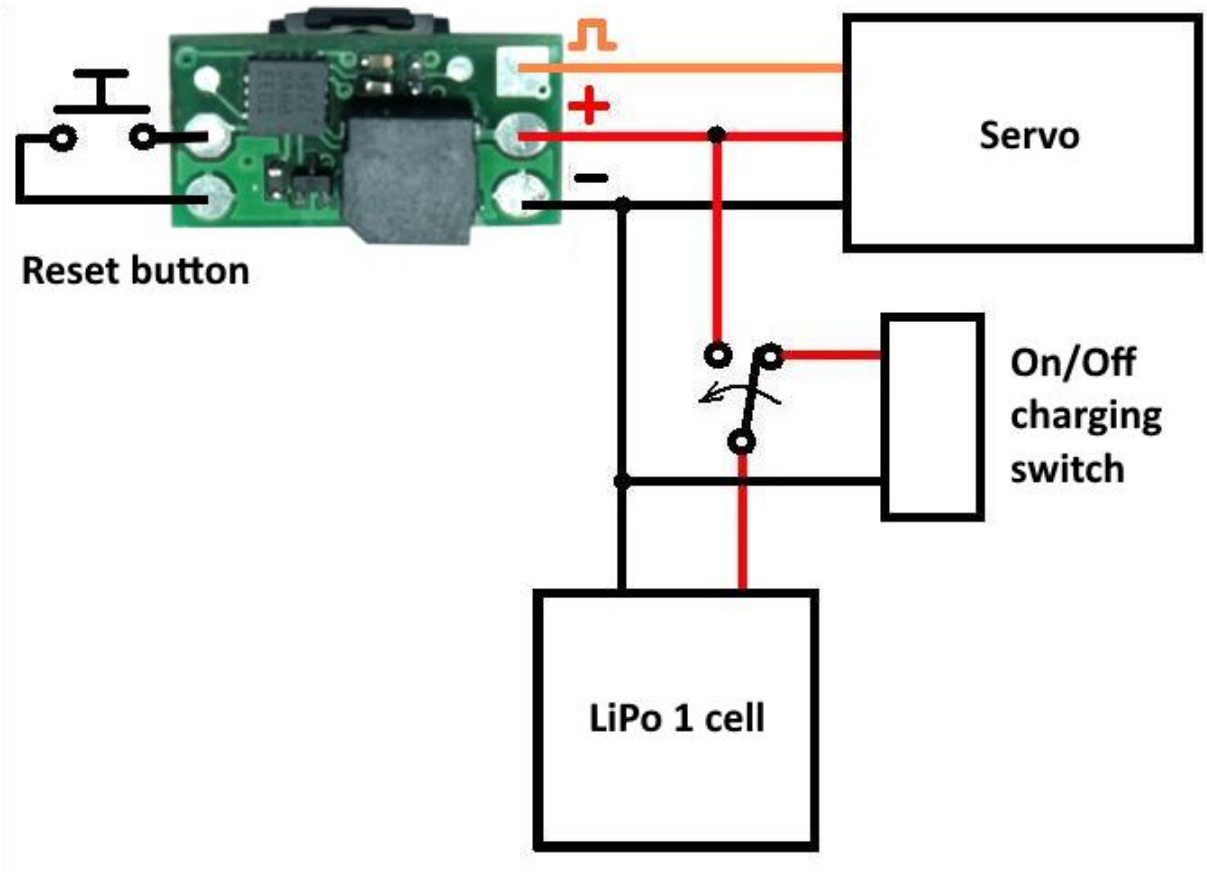

Figure 1: The RC F1H module.

Selectable times

If not pre-programed by user, following times can be selected.

0: 15s	8: 140s
1: 30s	9: 180s
2: 50s	A: 200s
3: 60s	B: 240s
4: 80s	C: 260s
5: 90s	D: 300s
6: 110s	E: 320s
7: 120s	F: 360s

Programming the unit

To enter programming mode, press and hold down reset button while powering the module ON. Three normal beeps will be heard indicating programming mode. If there is no operation for 2s, module will exit programming mode and will go into normal countdown mode.

User has 2 different programming mode to select. To select them use reset button to change between modes. Mode is indicated with number of beeps:

1 normal beep: - programming of user time for selected position
2 normal beeps: programming of max/min servo lever position

To enter specific programming mode just wait for 2s after number of beeps are heard. Enter into programming mode is indicated with 2 short beeps.

Programming of user time for selected position

To program new time for selected position on rotary switch, please select position on rotary switch first, then power on module and enter into the programming mode (hold down switch, power module on, press switch once and wait for 2s)

Now enter new time simply as a result of A x B = time (in seconds). To enter new time of 15s you can select different options:
1 x 15, 3 x 5, 5 x 3, 15 x 1

With pressing of reset button, first A number is entered. Each press will indicate beep and will increase A number by 1. When you have finished entering number A wait for 2 s and 2 short beeps will indicate start of B number. After B number is entered, wait for 2s and a long 4s beep will indicate save of new time and exit from programming mode. Normal mode is active after that.

If you do not wish to save new time simply turn off module before finishing with B number and old time will still be inside memory.

Programming of max/min servo lever position

To program new max/min servo position power on module and enter into the programming mode (hold down switch, power module on, press switch twice and wait for 2s)

Now servo will go-to center position (1700us servo pulse) and with each press of reset button, servo pulse time will increase for 50us until 2200us is reached, then it will go to circle mode from 1500us – 2200us. Changing servo pulse will change servo lever position. When user is happy with max position, wait for 2s and min position can be set the same way as max. On min position servo pulse time is being changed in range from 1500us – 800us. Once finished, wait for 2s and long 4s beep will indicate save of new max/min and exit to normal mode.

If you do not wish to save new servo lever positions simply turn off module before finishing with min position and old values will still remain in memory.