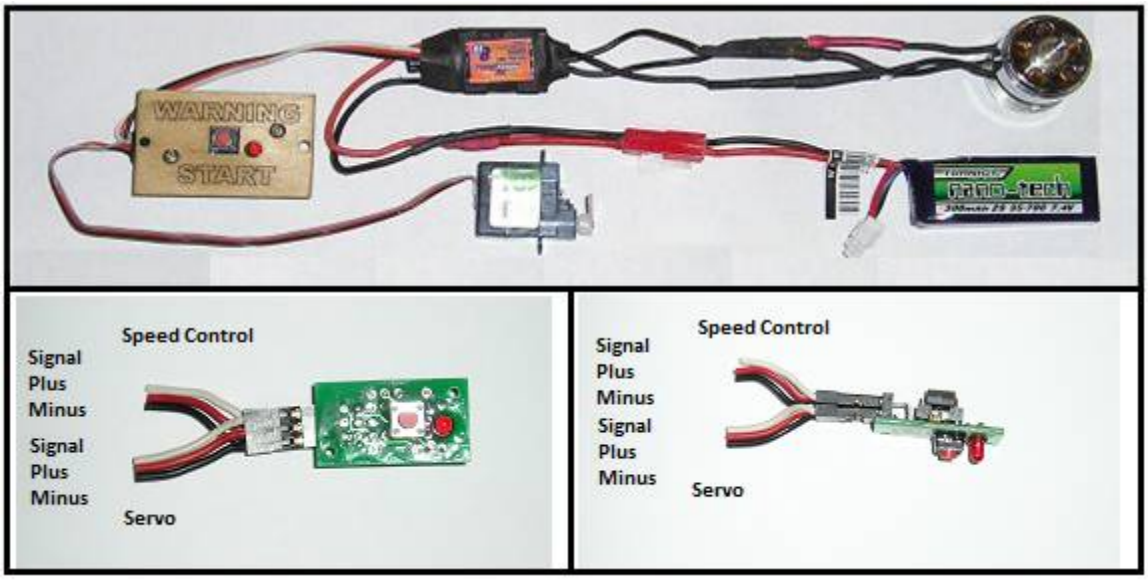
Instructions for Use of MicroController Timer
Version E36RDT (rev. 180416) with Test Flight Programs
Chip id E36_RDT 181904 Rev.

This timer was designed to drive a standard BEC/ESC speed control for brushed or brushless motors. It uses a PIC Microchip Controller to provide the signal (normally delivered by a radio control receiver) to the BEC/ESC for starting, running, and shutdown of the motor as well as moving a servo at appropriate times to provide a dethermalize function. A single push button is used to communicate with the timer to select a function, including the flight program. All timing starts as the button is released after the motor is started. This version has 9 functions for 8 flight programs and 1 servo setup routine.

Program	*Power*	*Time*	*Delay*	*Function*	*Total Flight*
1	Servo Setup Program (see instructions on reverse of document)				
2	100%	5 s	115 sec	DT servo 90º	120 seconds
3	100%	10 sec	110 sec	DT servo 90º	120 seconds
4	100%	15 sec	105 sec	DT servo 90º	120 seconds
5	100%	5 sec	175 sec	DT servo 90º	180seconds
6	100%	5 sec	235 sec	DT servo 90º	240 seconds
7	100%	5 sec	295 sec	DT servo 90º	300 seconds
8	100%	5 sec	2 sec	DT servo 90º	7 seconds *Flight test*
9	100%	10 sec	50 sec	DT servo 90º	60 seconds *Flight test*

Installation: Install the timer in the fuselage with ready access to the battery connections or if using a switch in the battery leads, place the switch for easy external access. Mount the push button so that it will be under your thumb when the model is held in its launch position. It is convenient if the LED on the timer module can be seen from outside the plane. The timer may be mounted on the inside of the fuselage with the button & led protruding through appropriate holes.



Connections: Connect the timer, BEC, battery, and motor as follows:

1) Connect the motor to the BEC/ESC. Connect the BEC/ESC to the timer board carefully observing the polarity of the 3 wire connector.
2) Connect the servo to the timer carefully observing the polarity and position of the 3 wire connector.
3) Connect the battery to the BEC/ESC either directly or via an optional switch. Use of direct connections is recommended only just prior to flying. *Direct connections must be disconnected to preserve battery power after flying.*

<u>Operation</u>: There are five steps to using the timer to control your model.

Step 1. Upon switching on or connecting the battery leads, the timer goes into a 3 second safety phase. The LED will be lit. If the button is accidentally held ON or is pushed, the 3 second safety window will start over. *The button must be released for a full 3 seconds before the next step will occur.*

Step 2. **The LED will go off showing that the program number may be entered.** Press and release the button repeatedly until you have entered the program number you want. The LED will light as you press the button, and go out as you release the button. *The button must be released for a full 3 seconds before the next step will occur.*

Step 3. **The LED will flash a number of times equal to the program that you have entered**. There will be a pause before the cycle repeats.

Step 4. **To start the motor, press the button for at least 1 full second.** The LED will flash rapidly showing that the motor is about to start. If the button is not pressed for a full second, the program will remain in this step with the LED flashing rapidly. *Press the button for a full second to start the motor.* ***Do not release the button until you launch the plane.***

Step 5. **Launch the plane and simultaneously release the button to start the timing function**. ***Pressing the button after it has been released will stop the motor and start over at step 1...***

If prior to launch, you find that the program selection is not what you want (i.e. LED blinking the wrong program number), start the motor as necessary (step 4), stop the motor by pushing the button (step 5), and you will be at the 3 second delay (step 1) where you can set the program again.

<u>Servo Operation to Load Trip Wires.</u> This version of the timer supports moving a connected servo to allow attachment of the trip wires. **This function may also be used to insure that the RDT system is operational.**

Step 1. Upon switching on or connecting the battery leads, the timer goes into a 3 second safety phase. The LED will be lit. If the button is accidentally held ON or is pushed, the 3 second safety window will start over. *The button must be released for a full 3 seconds before the next step will occur.*

Step 2. The LED will go off showing that the program number may be entered. Press and release the button once. The LED will light as you press the button, and go out as you release the button. *The button must be released for a full 3 seconds before the next step will occur.*

Step 3. The LED will flash once to show that you have entered program 1. There will be a pause before the cycle repeats. Press the button for at least 1 full second. The LED will flash rapidly showing that the program entry is complete. Release the button and the LED will go out.

Step 4. **Either the button may be pressed or the RDT transmitter may be pressed**. The servo moves to the 90 degree position.

Step 5. At this step, the DT lever may be placed into the slot of the servo wheel. **Press the button or operate the RDT and the servo** will move to the home position, control will return to step 1 of the Operation instructions above. The function line can then be attached to the lever.

Reference the documentation supplied by the chosen RDT manufacturer as to the receiver placement, antenna routing, transmitter charging etc.

The SLFT E-timer/RDT requires that the program chip be of the RDT variant. Use of a normal non-RDT chip in the RDT timer will *always* perform an immediate flight cancellation as the plane is launched. For convenience the operation of the E-timer/RDT system uses the same flight programs as the current SLFT E-timers (e.g. E36ab, E36comp, F1Q, etc.).

To operate, press the button on the RDT system transmitter (or activate as per instructions).
If the motor is running, the model's motor will stop. After a 2 second delay
the RDT button may be pressed again to activate the DT servo. If the button is not pressed the second time, the DT will occur normally at the end of the DT delay.
If the motor has finished running and the RDT button is pressed, the DT servo will operate immediately.