

JMP 2 function Timer for Control-line electric model

Généralities :

The JMP Timer allows control of total motor run time, part throttle run-up, two independent flight throttle settings and optional motor sag warning for "end of tank", together with control of a gear retract servo..

It controls your model's ESC. Thus all types of motors can be used, brushed or brushless are no problem..

Motor run-up time can be programmed in 1s. steps between 1s. and 100s.

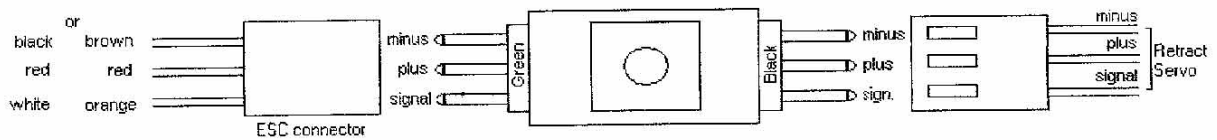
Total time can be programmed in 10s. steps between 10s. and 1000s

Accuracy is ensured by programming times in a learning mode.

The data lock feature prevents unintentional modification of the programmed parameters.

The JMP Timer weighs less than 1 gram and drains less than 0,5 mA. It operates from 2,5V to 5,5V

How to connect the timer :



1) Operation :

- Plug the green insulated male plug of the timer into the receiver socket of the ESC. Plug the retract servo connector onto the black male plug of the timer. See drawing above for correct orientation of connectors.
- Connect the battery to the ESC. The ESC becomes armed.
- Press the button and hold down.
After 2,5 s., the motor accelerates to full speed and remains at full speed until the button is released. When the button is released, the motor slows down to the programmed run-up speed.
- Timing starts upon release of the button.
- Once the run-up time has elapsed, the motor accelerates to the first flight speed.
- After 10 s. the retract servo moves to the gear retract position.
- After the first flight speed time, the motor changes to the second flight speed
- The timer stops the motor at the end of the programmed motor run time and the retract servo moves back to its idle position (extend gear). If motor sag mode was selected, the motor sags two times, the retract servo moves to the gear extended position and the motor continues to run 5 seconds before stopping.
- At any time during motor run timing, pressing the button twice will stop the motor.

.../...

2) Programming : (NOTE : programming is possible only when data lock is deactivated !
- see § 4 -)

- It is possible to independently program the following parameters:
 - Motor run-up time (from launch in 1s. steps)
 - Total motor run time (from launch to stop in 10s. steps)
 - Motor run-up speed (64 possible steps from 0 to 100%)
 - Motor first flight speed (64 possible steps from 0 to 100%)
 - Motor first second speed (64 possible steps from 0 to 100%)
 - Data lock/unlock
- Programming is performed by pressing the button according to a preset sequence

Total motor run time:

Press the button 2 times and hold.

The motor starts briefly 2 times (2 "bips") to confirm that the timer is in total motor run time learning mode.

When ready for time measurement, release the button.

When the desired time has elapsed, press the button.

The servo bips 2 times to confirm that it has correctly learned the new motor run time.

Motor first speed time:

Press the button 4 times and hold.

The motor starts briefly 4 times (4 "bips") to confirm that the timer is in motor run-up time learning mode.

When ready for time measurement, release the button.

When the desired time has elapsed, press the button.

The servo bips 4 times to confirm that it has correctly learned the new motor run-up time.

Note : *The actual memorised total motor run time and first speed time are 10 times the measured time - for 3 minutes, measure 18 seconds –*

Motor run-up time:

Press the button 3 times and hold.

The motor starts briefly 3 times (3 "bips") to confirm that the timer is in motor run-up time learning mode.

When ready for time measurement, release the button.

When the desired time has elapsed, press the button.

The servo bips 3 times to confirm that it has correctly learned the new motor run-up time.

Motor first flight speed setting :

Press 4 times and hold. The motor bips 4 times.

Release the button for less than one second and hold.

After 2 seconds, the motor goes to the memorised speed and begins to change speed in small steps at 0,6s. intervals.

When end throttle is reached, either full or stop, the motor speed automatically begins stepping the other way.

At any time, briefly releasing the button will change the speed

stepping direction.

When the desired speed is reached, release the button. After 1s., the motor stops.

Motor run-up speed setting :

Press 3 times and hold. The motor bips 3 times.

Release the button for less than one second and hold.

After 2 seconds, the motor goes to the memorised speed and begins to change speed in small steps at 0,6s. intervals.

When end throttle is reached, either full or stop, the motor speed automatically begins stepping the other way.

At any time, briefly releasing the button will change the speed stepping direction.

When the desired speed is reached, release the button. After 1s., the motor stops.

Motor second flight speed setting :

Press 2 times and hold. The motor bips 2 times.

Release the button for less than one second and hold.

After 2 seconds, the motor goes to the memorised speed and begins to change speed in small steps at 0,6s. intervals.

When end throttle is reached, either full or stop, the motor speed automatically begins stepping the other way.

At any time, briefly releasing the button will change the speed stepping direction.

When the desired speed is reached, release the button. After 1s., the motor stops.

Note : *To exit the programming mode without altering the memorised parameters, briefly press the button less than one second after having first released it.*

3) Motor sag warning option :

The motor sag warning option is activated or deactivated as follow :

- Press the button 5 times and hold.
- The motor bips 5 times.
- Release the button.
- The motor will alternatively "bip" 1 time and 2 times, etc...
- If the motor sag is to be activated, press the button after the motor has "bipped" 1 time, and before it "bips" 2 times.
- The motor bips 2 times to confirm that motor sag warning is active.
- To inhibit motor sag, press the button after the motor has "bipped" 1 time. The motor "bips" 1 time to confirm that motor sag is inactive.

4) Data lock / unlock :

The data lock feature protects the memorised parameters from unintentional modification.

- Press the button 5 times and hold.
 - The motor bips 5 times. Keep the button held down.
 - After 5s., the motor bips 3 times to confirm data lock or 2 times to confirm data unlock.
 - Release the button.
- .../...

5) Testing the timer without running the motor :

- Connect a servo to the green insulation plug of the timer. Mind the orientation of the plug/socket - See drawing -.
 - Connect a regular RC receiver battery to the black insulation plug of the timer. Mind the orientation of the plug/socket - See drawing above -.
- The servo position will give an image of the speed value output by the timer.

6) Timer configuration at delivery :

The timer is sent in the following configuration :

- Run-up time = 5 seconds
- First flight time = 30 seconds
- Total flight time = 60 seconds
- Run-up speed = 33%
- First flight speed = 66%
- Second flight speed = 100%
- Warning "burps" ON
- Data unlocked

7) Summary of programming sequences :

Press	Release, wait & press	Release, press & wait	Press and hold
2 times	Total time	Second flight speed	
3 times	Run-up time	Run-up speed	
4 times	First flight time	First flight speed	
5 times	Burp On/Off		Lock/unlock