

Instructions – FM-9retract_ext BEC

Flight time, delay time, mode of operation, and RPM/throttle values are entered in the same way as for other FM-9 timers, using the FM-9 Programmer. The timer should **not** be connected to the external BEC when programming it because the programmer supplies the power. **Hold down the start button when you first power up the timer with the programmer**, to ensure that it pays attention and can be programmed for the available flight parameters.

Undercarriage down is taken as retract servo fully counterclockwise and undercarriage up is taken as retract servo full clockwise.

Retract time (the time after the flight time begins) as well as whether the power stays on for a time after the 5-second warning and gear extension, is determined by the programmer. The throttle for flight power is advanced rather slowly, to provide a more realistic takeoff on a hard surface.

The end-of-flight warning is given at the end of the programmed flight time. It may be an increase in power if the throttle setting is very low but will generally be a decrease in power.

If, in static testing, you push the start button during the “flight” time, the gear will immediately come down and the motor will stop.

Be sure to connect the ESC (left three pins) and the retract servo to the timer as shown on the picture.

With two gear legs to retract and extend, you may need a “Y” servo connector to connect both retract servos to this single 3-pin retract connection. However, the E-Flite retracts already provide a single 3-pin connector to all the servos.

Hobby King’s HK-15090S-2 retracts are also reported to be compatible with this timer.

The external BEC must receive its power from the flight battery. You may do this by cutting the insulation on battery leads to the ESC, separating them, and making a good electrical connection to them, red to red and black to black!

(For those using Deans Ultra connections, there is a connector available that doesn’t require this splicing of the battery wires.)

The advantage of using an external BEC is that you then can use an ESC that is smaller and lighter than one that provides the 5A or so of BEC current required by most retract servos.

Castle Creations’ “CC BEC” has been used successfully as the external BEC by many fliers. If the retracts can be powered by the nominal 3.7 volts of a 1S LiPo battery, then it can be connected directly to the BEC bottom two power pins (but a 2S battery exceeds the maximum chip voltage of 5.5 volts and can’t be used).

