## Instructions – FM-9retract

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. Expect to need to 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.

If not changed by the FM-9 Retract Programmer, the retract command is given 10 seconds after flight timing begins (after the programmed delay time has completed), giving enough time for takeoff and a lap or two first.

The one-second 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 low but will generally be a decrease in power.)

Flight power is then restored for five seconds and then the undercarriage is lowered for landing. As initially programmed, the flight power continues for 0 seconds of level flight with gear down and then the motor is turned off for the landing. However, if you have enough battery power, you may add seconds to this time to show the judges the gear down in level laps before the power ends.

(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 as shown. The ESC you use must have 4-5A BEC capability to power the retracts. (The Brodak Hornet ESC promises 4A @5V. The Castle Creations Phoenix ICE, Edge, and Talon ESCs are ESCs that have proved to work well with the E-Flite retracts.)

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 (but already provided by the E-Flite retracts).

This timer may be used in place of the standard FM-9 timer but then the pins for the retract servo should be insulated to prevent accidental shorting. (The outer two pins carry the 5-volt power and the center pen carries the servo signal.)