

## „JWH-10 Timer configuration“ for Palm User Guide

Application works on most Palm devices equipped with native serial port (not USB port, it will not work with USB to serial adapter for Palm). Palm III, Palm V, Palm m100/105 and Palm 500 are the most common serial models available and are confirmed to be compatible with JWH-10.

Please download JWH-10.prc program from <http://w-hobby.com/F1A/JWH-10.prc> and load it on your Palm PDA using Palm Desktop application interface.

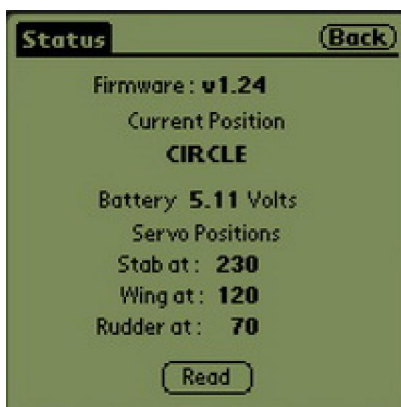
To connect JWH-10 timer to Palm use Palm serial cable + null modem adapter + JWH cable (shipped together with the timer). Once cable is connected, turn the JWH-10 power switch on – three short beeps indicate successful connection.



On your Palm device launch „JWH-10 Timer configuration“ application. You will see the W-Hobby logo window with three control buttons below.

„QUIT“ – exit and close the application.

„STATUS“ – brings up a window displaying version of timer firmware, current position of the towhook, battery status and positions of all servos.



„Back“ button in upper right corner takes you back to the previous screen.

„EDIT“ – opens Global settings window where we change the timer settings.



Global settings are the same for all 4 data sets. At the top of window there are 4 check boxes „RDT“, „Sound“, „LED“ and „Power save“. When box is checked function is enabled, unchecked box disables the specific function:

„RDT“ - enables optional RCDT (Remote Control DT) Aeris and Airtek modules

„Sound“- turns the timer sound on

„LED“ – turns the timer LED indicator on

„Power save“ – enables Power saving function

Below is function „Accel err timeout“ – it allows you to specify the timeout for acceleration error (the situation when towhook is already open, but model is not in right position or has insufficient speed for bunt). Delaying/holding the model on the line for specified time period forces timer to skip bunt and go to defined step. The count starts when towhook latch opens but towhooks still stays in front position.

Next in this window are „Power off timeout“ and „Tow error timeout“.

„Power off timeout“ – number of seconds before timer power is completely turned off after the last defined function is executed.

„Tow error timeout“ – this function saves the model when it is released with towhook still closed (accidentally released or broken towline). After defined time period timer will produce a series of warning beeps and model will DT. The count starts when towhook is closed and in the rear position, count is reset every time towhook is moved to forward position.

Below is „Data Set“ line with four buttons: 1, 2, 3 and 4.

Those numbers are bound to the positions of the timer rotary switch. Button 1 is for positions from 0 to 3, button 2 is for positions from 4 to 7, 3 is for 8 to B, 4 is for C to F. What this means is that you can create 4 different sets of settings and upload them all to your timer, then select the desired set by

turning the rotary switch to the appropriate position. Each set has 4 positions (for example Set 1 has 0,1,2 and 3) for different DT settings if required.

The very bottom of the window contains three buttons „Update“, „New“ and „Read“ for reading and writing the settings to/from the timer.

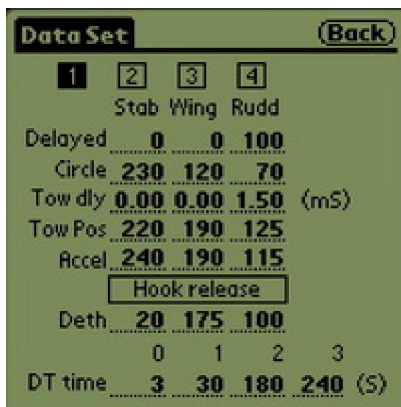
„Read“ – reading data from the timer. When pressed it starts reading settings from the timer to Palm, „Transfer from timer in progress“ is displayed while downloading and few short beeps indicate when transfer is completed successfully.

„Update“ –writing data to the timer. When pressed it starts writing settings from Palm to the timer. „Transfer to timer in progress“ is displayed while uploading and three short beeps indicate when transfer is completed successfully.

„New“- allows to create new settings from scratch instead of modifying the existing values.

Further steps of Timer programming: press on „Read“ and wait until several beeps confirm successful data download from the timer. Next task is editing the settings.

Press „Data Set“ 1 button to open Data Set window. Four number boxes at the top indicate the set being edited (dark box).



Below in this window there are columns „Stab“, „Wing“ and „Rudd“ containing the values for each Stabilizer, Wing and Rudder servos, rows represent program phases:

„Tow pos“- Straight tow phase. Towhook is latched and in the forward position.

„Circle“ – Circle tow phase. Towhook is latched and is in the rear position.

„Accel“ – Acceleration phase (pre-launch). Towhook is open and in the forward position, towline is still attached.

„Deth“ – Dethermalization (DT) phase terminates the model flight.

By changing the values in each row and column we set the position of each servo during every phase.

Two non standard (experimental) phase rows have to be explained in more detail:

JWH-10 timer has an option to delay the phase switching between circle and straight tow- this feature allows to start accelerating model before the full turn is completed- servo positions can be maintained/or adjusted in circle mode even when towhook is returned to the forward position.

„Tow dly“ – Tow delay time is set in milliseconds.

„Delayed“ – servo positions during the delay phase.

Each servo delay can be adjusted independently. The feature is only enabled when Tow Dly value is non zero in one or more columns, in that case timer switches from Circle to Delayed phase before going back to Tow phase every time unlatched towhook is moved back and forth. Servos stay in positions specified in Delayed phase for the time period specified in Tow Dly row. If all Tow Dly values are set to zero, then Delayed phase is ignored and servos switch from Circle to Tow phase immediately.

The very bottom of the window contains the values (in seconds) of DT time for each of 4 rotary switch positions for the current Data set. The following table shows rotary switch positions for each data set and each DT sub-set.

„Data Set“ 1 – switch positions 0, 1, 2 and 3.

„Data Set“ 2 – switch positions 4, 5, 6 and 7.

„Data Set“ 3 - switch positions 8, 9, A and B.

„Data Set“ 4 - switch positions C, D, E and F.

	Stab	Wing	Rudd	Delay	Whole
1:	225	190	125	0.30	0.30
2:	200	190	125	0.30	0.60
3:	150	190	125	0.40	1.00
4:	100	190	125	0.40	1.40
5:	70	190	125	0.40	1.80
6:	190	175	100	3.00	4.80
7:	220	175	100	0.00	4.80
8:	0	0	0	0.00	4.80

The last programming window is entirely dedicated to Bunt settings. Hook Release window is called by pressing a Hook Release button in Data Set window. Hook Release phase starts when Towhook latch is open and towhook moves back from the forward position. Hook Release phase is composed of up to 16 consecutive sub-phases. Each row represents one sub-phase and contains both servo positions (columns Stab, Wing, Rudd) and time settings (Delay, Whole).

The columns are:

„Stab“ – Stabilizer servo position.

„Wing“ – Wing servo position.

„Rudd“ – Rudder servo position.

„Delay“ – sub-phase duration in seconds.

„Whole“ – total time from the start of Hook Release phase. This value is for information only, it is automatically calculated and can not be altered directly.

The last configured sub-phase contains the values for gliding position of each servo. The timer will not process any sub-phase below phase with zero Delay value. The first sub-phase with zero Delay value triggers switch to DT phase configured in previous window (that is when DT time count starts, effective servo positions are maintained as specified in the last sub-phase).

The bottom of Hook Release window has a Validate button that will check the logical integrity of the sequence.

Now the last step is to upload the modified program back to the timer. First we need to press Back button in upper right corner twice to return to Global settings window. Here we have Update button in the lower left corner that will initiate transfer of program back to the timer. „Transfer to timer in progress“ is displayed during the upload and three audible beeps indicate the successful completion of the transfer.

Note: sometimes during upload or download the following error is displayed

„DATA READ ERROR Error Code 773“

This error indicates that there is connection problem between Palm and JWH-10 timer. Please check connections of the cables and null-modem adapter, make sure the timer is turned on and try again.

Have a great flight and best thermals!