

ATTENTION: It is **IMPORTANT** to **READ THIS MANUAL** before use as many of the default programming settings may not be correct for your application. Check the **battery type** and **timing selections** before the first use. Having either of these improperly set may result in overheating and failure of the ESC.

CAUTION:

1. Before programming, secure the motor or aircraft and stay clear of the propeller.
2. Running the motor at high RPM without a propeller attached may damage the motor.

Connection Instructions:

1. Solder an appropriate connector on the battery + (red) and - (black) leads.
2. Connect the three motor wires to your brushless motor (ignore the wire colors) using gold (bullet) connectors. If the motor spins in the wrong direction, swap any two of the motor wires to reverse the direction. Be sure to cover the bullet connectors with heat shrink tubing.
3. Plug the servo-style connector into the appropriate channel on your receiver. Most receivers use channel 3 for the throttle, but some use channel 1. Consult the manual that came with your receiver or transmitter for details.

Programming Instructions:

1. Connect your motor and receiver to ESC, but do not connect the battery yet.
2. Turn on your transmitter and move the throttle stick to the full-throttle position. (Please Note: Most Futaba transmitters have the throttle channel reversed by default).
3. Connect your battery to the ESC and you will hear a starting beep tone indicating the ESC is in program mode. After 3 seconds, the motor will start beeping a sequence -- a musical tone followed by a series of beeps. Each sequence represents a parameter that can be programmed and is repeated three times.

Step 1: When you hear the sequence of the parameter you wish to set, move the throttle stick to the **CENTER POSITION TO ENTER THE SUB-MENU**. The controller will start beeping a sequence of short and long beeps representing the possible options you can program for each parameter. See the list on the Page 2 for programming options within each sub-menu. Each option is repeated three times.

Step 2: To select and save the option you wish to set, move the throttle stick to the **FULL UP POSITION** when you hear the option you wish to select. The controller will save the selected option, then sound a long confirmation tone. The programming sequence will then return to the beginning.

Step 3: Set all parameters you wish to change. **Next, move the throttle stick to the lowest position. This will exit programming mode.** The controller will re-initialize in normal running mode so you can run your motor.

 —	Music Tone + 1 Beep	Option 1: Cell type & No. of Cells
 — —	Music Tone + 2 Beep	Option 2: Throttle Setting
 — — —	Music Tone + 3 Beep	Option 3: Brake Setting
 — — — —	Music Tone + 4 Beep	Option 4: Direction & Cut-off
 — — — —	Music Tone + 5 Beep	Option 5: Timing
 — — — —	Music Tone + 6 Beep	Option 6: PWM (Pulse Width Modulation) Setting

Option 1.1 Cell Type and Number of Cells ♪—	
• — 1 Short + 1 Long	NiMh/NiCD Auto Cell Count - 0.8V/Cell Cutoff Voltage * (Default)
• — — 1 Short + 2 Long	7S Li-Po (25.9V) – 21V Cutoff Voltage
• — — — 1 Short + 3 Long	6S Li-Po (22.2V) – 18V Cutoff Voltage
• — — — — 1 Short + 4 Long	5S Li-Po (18.5V) – 15V Cutoff Voltage
• — — — — — 1 Short + 5 Long	4S Li-Po (14.8V) – 12V Cutoff Voltage
• — — — — — — 1 Short + 6 Long	3S Li-Po (11.1V) – 9V Cutoff Voltage
• — — — — — — — 1 Short + 7 Long	2S Li-Po (7.4V) – 6V Cutoff Voltage

Option 2. Throttle Setting ♪— —	
•• — 2 Short + 1 Long	Auto Throttle Range *
•• — — 2 Short + 2 Long	1.1ms to 1.8ms
•• — — — 2 Short + 3 Long	Hard Acc* (Default)
•• — — — — 2 Short + 4 Long	Soft Acc

Option 3. Brake Setting ♪— — —	
••• — 3 Short + 1 Long	No Brake
••• — — 3 Short + 2 Long	Soft Brake* (Default)
••• — — — 3 Short + 3 Long	Medium Brake
••• — — — — 3 Short + 4 Long	Hard Brake

Option 4. Direction and Cutoff Type ♪— — — —	
•••• — 4 Short + 1 Long	Clockwise Rotation * (Default)
•••• — — 4 Short + 2 Long	Counterclockwise Rotation
•••• — — — 4 Short + 3 Long	Soft Cutoff
•••• — — — — 4 Short + 4 Long	Hard Cutoff * (Default)

Option 5. Timing Mode Setting ♪— — — — —	
•••• — 5 Short + 1 Long	1° - For 2-4 Pole Inrunner Motors * (Default)
•••• — — 5 Short + 2 Long	7° - For 6-8 Pole Motors
•••• — — — 5 Short + 3 Long	15° - For 10-14 Pole Outrunner Motors
•••• — — — — 5 Short + 4 Long	30° - For 10-14 Pole High-RPM Outrunner Motors

Option 6. Pulse Width Modulation(PWM) Setting ♪— — — — —	
••••• — 6 Short + 1 Long 8KHz	– For low RPM and low pole count motors * (Default)
••••• — — 6 Short + 2 Long 16KHz	– For most out runner motors