



Speed Controller Programming Instructions

*For Advanced Programmable Normal Aircraft ESC
50A / 60A / 70A / 100A ESC*







Phase 1: Enter Programming Mode

1. Connect your motor and receiver to the speed controller, *but do not connect the battery yet.*
2. Turn on your transmitter and move the throttle stick to the full throttle position (full up). *Please Note: Most Futaba transmitters have the throttle channel reversed by default.*
3. Connect your battery, and the controller will initialize with a musical tone.

Phase 2: Programming

After 3 seconds, the controller will start beeping a sequence of tones. A musical tone followed by one or more beeps. Each sequence represents a parameter that you can program and is repeated 3 times.

The parameters are:

 ___	Music Tone +1 Beep	Option 1. Cell Type and No. of Cells
 ___ ___	Music Tone +2 Beeps	Option 2. Throttle Setting
 ___ ___ ___	Music Tone +3 Beeps	Option 3. Brake Setting
 ___ ___ ___ ___	Music Tone + 4 Beeps	Option 4. Direction and Cutoff Type
 ___ ___ ___ ___ ___	Music Tone + 5 Beeps	Option 5. Timing Mode
 ___ ___ ___ ___ ___ ___	Music Tone +6 Beeps	Option 6. PWM Setting

- Step 1 Starting, Enter Sub-options.** When you hear the sequence for the parameter you wish to program, move the throttle stick to the **Center Position to Enter Sub-options**. The controller will then **start beeping a Morse code sequence** of short and long beeps representing the possible options that you may choose for the selected parameter. See **Tables** for a list of all programmable options. Each option sequence is repeated 3 times.
- Step 2 Select and Save.** Select the option, move the **throttle stick** back to the **Full-up-position**. When you hear the sequence for the option you wish to select. The controller will then save the selected option, and **sound a long beep as a confirmation**. It then goes back to the beginning of the programming sequence (phase 2).
- Step 3 Complete Programming & Save Options:** Set-up all the parameters you need to change. When complete, move the throttle stick to the **Lowest (Down) Position**. The controller will save all options and re-initialize in normal running mode so you can start your motor.



The table below summarizes the various programming options for each parameter:

TABLE 1: OPTIONS: 1.1 – 1.5

Option 1.1 Cell Type and Number of Cells	Only for 50A/60A/100A-LV (LV as 2S-7S)
• — 1 Short + 1 Long	NiMh/NiCD Auto Cell Count - 0.8V/Cell Cutoff Voltage
• — — 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) – 8V Cutoff Voltage

Option 1.2 Cell Type and Number of Cells	Only for 70A (MV as 4S-8S)
• — 1 Short + 1 Long	NiMh/NiCD Auto Cell Count - 0.8V/Cell Cutoff Voltage
• — — 1 Short + 2 Long	8S Li-Po (29.6V) – 24V Cutoff Voltage**
• — — — 1 Short + 3 Long	7S Li-Po (25.9V) – 21V Cutoff Voltage
• — — — — 1 Short + 4 Long	6S Li-Po (22.2V) – 18V Cutoff Voltage
• — — — — — 1 Short + 5 Long	5S Li-Po (18.5V) – 15V Cutoff Voltage
• — — — — — — 1 Short + 6 Long	4S Li-Po (14.8V) – 12V Cutoff Voltage

Option 1.3 Cell Type and Number of Cells	Only for 80A-HV/100A-HV (HV as 6S-10S)
• — 1 Short + 1 Long	NiMh/NiCD Auto Cell Count - 0.8V/Cell Cutoff Voltage
• — — 1 Short + 2 Long	10S Li-Po (37V) – 30V Cutoff Voltage
• — — — 1 Short + 3 Long	9S Li-Po (33.3V) – 27V Cutoff Voltage
• — — — — 1 Short + 4 Long	8S Li-Po (29.6V) – 24V Cutoff Voltage
• — — — — — 1 Short + 5 Long	7S Li-Po (25.9V) – 21V Cutoff Voltage
• — — — — — — 1 Short + 6 Long	6S Li-Po (22.2V) – 18V Cutoff Voltage ****

Option 1.4 Cell Type and Number of Cells	Only for 80A-12S/200A-12S (UHV as 8S-12S)
• — 1 Short + 1 Long	NiMh/NiCD Auto Cell Count - 0.8V/Cell Cutoff Voltage
• — — 1 Short + 2 Long	12S Li-Po (45.4V) – 39V Cutoff Voltage
• — — — 1 Short + 3 Long	11S Li-Po (41.7V) – 33V Cutoff Voltage
• — — — — 1 Short + 4 Long	10S Li-Po (37V) – 30V Cutoff Voltage
• — — — — — 1 Short + 5 Long	9S Li-Po (33.3V) – 27V Cutoff Voltage
• — — — — — — 1 Short + 6 Long	8S Li-Po (29.6V) – 24V Cutoff Voltage

Option 1.5 Cell Type and Number of Cells	Only for 200A-15S
• — 1 Short + 1 Long	NiMh/NiCD Auto Cell Count - 0.8V/Cell Cutoff Voltage
• — — 1 Short + 2 Long	15S Li-Po (45.4V) – 39V Cutoff Voltage
• — — — 1 Short + 3 Long	14S Li-Po (41.7V) – 33V Cutoff Voltage
• — — — — 1 Short + 4 Long	13S Li-Po (37V) – 30V Cutoff Voltage
• — — — — — 1 Short + 5 Long	12S Li-Po (33.3V) – 27V Cutoff Voltage
• — — — — — — 1 Short + 6 Long	11S Li-Po (29.6V) – 24V Cutoff Voltage



TABLE 2; OPTIONS 2 - 6

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*
•• — — — — 2 Short + 4 Long	Soft Acc

Option 3 Brake Setting 🎵 _ _ _ _	
••• — 3 Short + 1 Long	No Brake
••• — — 3 Short + 2 Long	Soft Brake
••• — — — 3 Short + 3 Long	Medium Brake
••• — — — — 3 Short + 4 Long	Hard Brake

Option 4 Direction and Cutoff Type 🎵 _ _ _ _ _	
•••• — 4 Short + 1 Long	Clockwise Rotation *
•••• — — 4 Short + 2 Long	Counterclockwise Rotation
•••• — — — 4 Short + 3 Long	Soft Cutoff
•••• — — — — 4 Short + 4 Long	Hard Cutoff *

Option 5 Timing Mode Setting 🎵 _ _ _ _ _ _	
••••• — 5 Short + 1 Long	1° - For 2-4 Pole Inrunner Motors *
••••• — — 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 *
•••••• — 6 Short + 2 Long 16KHz	- For most out runner motors

*** Default Setting**