Speed Controller Programming Instructions
For High Voltage Full options 50A/70A/80A/100A/125A/200A

1.2 ♪— For (4S-8S) ESC 70A	Cell Type and Number of Cells
• — 1 Short + 1 Long	Ni-MH / Ni-CD 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

1.3 ♪— For (6S-10s) ESC 80A-HV/100A/125A-HV-10S/200A-10S	Cell Type and Number of Cells
• — 1 Short + 1 Long	Ni-MH / Ni-CD 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

1.4 ♪— For (8S-12s) ESC 125A-12S/200A-12S	Cell Type and Number of Cells
• — 1 Short + 1 Long	Ni-MH / Ni-CD Auto Cell Count - 0.8V/Cell Cutoff Voltage
• — — 1 Short + 2 Long	12S Li-Po (45.4V) – 36V 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

2. Throttle Setting ♪— —	
•• — 2 Short + 1 Long	Auto Throttle Range *
•• — — 2 Short + 2 Long	1.1ms to 1.8ms
•• — — — 2 Short + 3 Long	Hard start*
•• — — — — 2 Short + 4 Long	Soft start

3.1 Brake Setting (For normal Aircraft) ♪— — —	
••• — 3 Short + 1 Long	No Brake
••• — — 3 Short + 2 Long	Soft Brake*
••• — — — 3 Short + 3 Long	Medium Brake
••• — — — — 3 Short + 4 Long	Hard Brake

3.2 Throttle Type (For Helicopter) ♪— — —	
••• — 3 Short + 1 Long	Normal *
••• — — 3 Short + 2 Long	Governor Mode with 2-4 poles motors
••• — — — 3 Short + 3 Long	Governor Mode with 6-10 poles motors
••• — — — — 3 Short + 4 Long	Governor Mode with 12-14 poles motors

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 *

5. Timing Mode Setting ♪— — — — —	
••••• — 5 Short + 1 Long 1°	For 2-4 Pole In-runner Motors *
••••• — — 5 Short + 2 Long 7°	For 6-8 Pole Motors
••••• — — — 5 Short + 3 Long 15°	For 10-14 Pole Out-runner Motors
••••• — — — — 5 Short + 4 Long 30°	For 10-14 Pole High-RPM Out-runner Motors

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

* is Default Setting

Speed Controller Programming Instructions
For High Voltage Full options 50A/70A/80A/100A/125A/200A

Phrases 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.

Phrases 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 / Throttle type (for Heli)

Music Tone + 4 Beeps ♪— — — —
Option 4 --- Direction and Cutoff Type

Music Tone + 5 Beeps ♪— — — — —
Option 5 --- Timing Mode

Music Tone + 6 Beeps ♪— — — — — —
Option 6 --- Pulse Width Modulation (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 you may choose for the selected parameter. See table 2 for a list of all programmable options. Each option sequence is repeated 3 times.

Step 2 --- Select and save
To 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 (phrases 2).

Step 3 --- Complete programming and save options
Setup 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:

1.1 ♪— For (2S-7S)-ESC 50A/80-LV/125A-LV	Cell Type and Number of Cells
• — 1 Short + 1 Long	Ni-MH / Ni-CD 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) – 6V Cutoff Voltage