

ACS Series of Brushless Speed Control Instruction

Battery power support at 2 ~ 6S of Li-Poly(3.7V/per)

Item No	Product Name		
ACS-10A	10A	Brushless Motor Control	
ACS-15A	15A	Brushless Motor Control	
ACS-25A	25A	Brushless Motor Control	
ACS-40A+HS	40A	Brushless Motor Control w/ Heat Sink	
ACS-55A+HS	55A	Brushless Motor Control w/ Heat Sink	
ACS-70A+HS	70A	Brushless Motor Control w/ Heat Sink	
ACS-90A+HS	90A	Brushless Motor Control w/ Heat Sink	
ACS-110A+HS	110A	Brushless Motor Control w/ Heat Sink	

Programmable setting:

1. Low-voltage cutoff with Auto-Lipo detect as default (Cutoff Voltage Setting) :

- a. Auto-Lipo detect -- ESC detects cell count, and sets cutoff for 3v/cell)
or NICAD or NIMH cut-off to 50% power at 0.88Volts /Cell
- b. 12V cutoff voltage -- 4s Lithium Polymer packs
- c. 18V cutoff voltage -- 6s Lithium Polymer packs
- d. 24V cutoff voltage -- 8s Lithium Polymer packs
- e. 30V cutoff voltage -- 10s Lithium Polymer packs
- f. 36V cutoff voltage -- 12s Lithium Polymer packs

2. Brake Type

Delayed brake provides a 4-second delay before braking occurs. Soft brake provides 50% of full braking power; hard brake is 100% braking power. Hard brake on high voltage systems should only be used with **very** small props.

- a. Soft delayed brake -- General aircraft use, with fixed or folding prop
- b. Hard delayed brake -- Direct drive applications where more braking power is required
- c. Soft brake, no delay -- Competition use where a very short brake delay is required
- d. Hard brake, no delay -- Competition use where a very short brake delay is required
- e. Brake Disabled -- Helicopters and 3D aircraft

3. Throttle Type

- a. Auto-Calibrating throttle -- Recommended for General aircraft & Fixed pitch helicopters
- b. Governor Mode (55% RPM Range) -- Recommended for General pitch helicopters
- c. Governor Mode (70% RPM Range) -- Recommended for collective pitch helicopters
- d. Governor Mode (85% RPM Range) -- Recommended for collective pitch helicopters

4. Timing Advance

- a. High advance timing (12°-35°) -- Recommended for more power at the expense of efficiency
- b. Standard advance timing (5°-20°)-- Recommended for a good balance
of power and efficiency.
- c. Low advance timing (0°-15°)-- Recommended for use when efficiency
or run-time is primary concern – Gives a slight loss of power with a slight increase in efficiency

5. Cutoff Type

- a. Cutoff --Immediate motor shutdown
- b. Soft Cutoff-- Throttles down power at low voltage or over-current

- 6. Soft Start ramp up**
 - a. Very soft start (0.8sec)-- Recommended for use with fragile gearboxes; governor mode softest start, slowest spool up, and throttle changes
 - b. Soft Start-- (0.4sec)Recommended for most setups; governor mode soft start, slow spool up and throttle changes
 - c. Fast start (0.2sec)--Recommended for fastest startup; governor mode faster start, fast spool up and throttle changes
- 7. PWM Switching Frequency(8-32KHz) :**
 - a. 8KHz
 - b. 16KHz
 - c. 32 KHz
 - d. NON
- 8. Motor Reverse**
 - a. clock-wise
 - b. re-clock-wise
- 9. Current Limiting**
 - a. Very Sensitive
 - b. sensitive
 - c. standard
 - d. insensitive
 - e. disabled
- 10. Battery Type**
 - a. Ni-cd
 - b. Li-Poly
- 11. Temp. Protect**
 - a. 110deg
 - b. 95deg
 - c. 80deg
- 12. Finally warning**
 - a. non
 - b. after 30sec time, the throttle will automatic put signal put 3 times step, this is finally warning.<airplane mold>
 - c. after 30sec time, the helicopter automatic limited throttle 75% power only.<Helicopter mold>
- 13. Servo input battery**
 - a. 4.8V
 - b. 6.0V
 - c. 7.2V

Other Feature of Alturn ESC

1. Runs motor in forward OR reverse
2. Overtemp Motor Cutoff with Reset
**(once over heat, automatic reduce 20% power limited, but consumer can adjust 110 , 95 , 80 degree)
(after temperature down, back to normal power)**
3. Safe “power on” arming program ensures motor will not accidentally turn on
4. Auto shut down when signal is lost or radio interference becomes severe
5. after cut off motor, the left battery power must passing to all of servos

Wire Info:

Black Wire: (+) Positive battery

Update: 5/30/2008

Version: 1.4

Red Wire: (-) Negative battery

Green Wire: (S) Single

Programmer Wire: above ESC has a 3 pin which is connector with program card wire.

(Use the Alturn ESC operate)

- a) ensure the Alturn ESC is connected to the proper channel on your receiver.
- b) turn on your transmitter and turn the throttle stick to off(lowest position).
- c) once you get ready to fly, and turn the throttle stick onto up positioned when first power up.
- d) and then you must move the throttle stick to lowest position and wait about 2 second.
- e) then you can start enjoy fly, the Alturn ESC is protect first power on operation.
- f) if motor has not running, please disconnect receiver power, and setting transmitter throttle stick in lowest, and try again above step.

(Default Set)

1. Low-voltage cutoff	Auto-Lipo detect
2. Brake Type	Soft delayed brake
3. Throttle Type	Auto-Calibrating throttle
4. Timing Advance	High advance timing (12°-35°)
5. Cutoff Type	Cutoff
6. Soft Start ramp up	Soft Start
7. PWM Switching Frequency	8KHz
8. Motor Reverse	Clock-wise
9. Current Limiting	standard
10. Battery Type	Li-Poly
11. Temp. Protect	95deg
12. Finally warning	non
13. Servo Supply Volt	6.0V

Programmer Card Display board:

Defult Set		1. Low-voltage cutoff 2. Brake Type 3. Throttle Type 4. Timing Advance 5. Cutoff Type 6. Soft Start ramp up 7. PWM Switching Frequency	8. Motor Reverse 9. Current Limiting 10. Battery Type 11. Temp. Protect 12. Finally warning 13. Servo input battery
1	Low-voltage cut off a. Auto-Lipo detect b. 12V cutoff voltage c. 18V cutoff voltage d. 24V cutoff voltage e. 30V cutoff voltage f. 36V cutoff voltage	Motor Reverse a. clock-wise b. re-clock-wise	8
2	Brake Type a. Soft delayed brake b. Hard delayed brake c. Soft brake, no delay d. Hard brake, no delay e. Brake Disabled	Current Limiting a. Very Sensitive b. sensitive c. standard d. insensitive e. disabled	9
3	Throttle Type a. Auto-Calibrating throttle b. Fixed throttle c. Governor mode (Low RPM Range) d. Governor Mode (High RPM Range)	Battery Type a. Ni-cd b. Li-Poly	10
4	Timing Advance a. High advance timing (12°~34°) b. Standard advance timing (5°~20°) c. Low advance timing (0°~15°)	Temp. Protect a. 110deg b. 95deg c. 80deg	11
5	Cutoff Type a. Cutoff b. Soft Cutoff	Finally warning a. non b. <airplane mold> c. <Helicopter mold>	12
6	Soft Start ramp up a. Very soft start (0.8sec) b. Soft Start (0.4sec) c. Fast start (0.2sec)	Servo input battery a. 4.8V b. 6.0V c. 7.2V	13
7	PWM Switching Frequency(13~52Khz): a. 13khz b. 26khz c. 52khz d. Non	 Alturn USA,.LLC. http://www.Alturn-USA.com	



Programming Alturn ESC

The Alturn ESC is ready to fly with most of common settings selected into the ESC as (Default Set), you don't have to change the setting in most cases, if you need to change settings, please follow setting programmer instruction.

1. First of all, disconnect between motor and ESC, and keeping ESC connecting with battery, and insert Alturn programmer connector wire on the Alturn ESC 3 pins, you will see the Reset bottom operate Blue LED, and display currently ESC function status.
2. Press on Reset bottom 3 second, waiting until bottom LED being Red light (Settable Status).
3. You can start select menu No. 1 to No. 13 feature LED light by "Left" or "Right" bottom, after you move to your demand function LED, you can press Reset bottom again to get in "details folder", you will see the LED light is flashing.
4. if you want out of this "detail folder", just press Reset bottom to get out to menu No. 1 to No. 13.
5. once you make sure this function is fit your application, you can Press Reset bottom 3 second again, until LED light turn to Blue light (Stetted Status).
6. after LED light turn to Blue light, it means is on safety protect, and you can disconnect programming wire.

Contact & Warranty Info

The Alturn USA company is cover warranty for in year from date of purchase to be free from manufacturing and component defect, this warranty doesn't cover abuse, neglect, or damage due to incorrect wiring, over voltage, or overloading, if you have any question or got any problems, or wish to repair or replacement that you can contact our support team directly:

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