ASSAN

Brushless Speed Controller Instructions

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Features

➢ High rate(10KHz) Switching (PWM) Pulse Width Modulation
➢ Dynamic Braking to ensure prompt prop folding
➢ BEC (2.0amps) provides power to receiver and servos (LV，MV-series).
➢ Overheat Protected
➢ Low Voltage Cut-off.
➢ Brake Mode
➢ Timing Advance
➢ Motor Rotation
➢ Safe Arming System protects user from startup accidents
➢ Built in Radio Fail Safe
➢ Micro Processor Controlled
➢ USB-LINKER for computer application

MODEL	CURRENT	DC INPUT	BEC	SIZE	WEIGHT
LV-10A	10amp	5.6v-12.6v	2amp	22.5*21*4(mm)	12g
LV-18A	18amp	5.6v-12.6v	2amp	27*24*5(mm)	17g
LV-25A	25amp	5.6v-12.6v	2amp	30*24*6.5(mm)	18g
LV-35A	35amp	5.6v-12.6v	2amp	43*24*6.5(mm)	22g
MV-45A	45amp	5.6v-25.2v	2amp	43*27*8(mm)	45g
MV-60A	60amp	5.6v-25.2v	2amp	43*27*8(mm)	48g
MV-90A	90amp	5.6v-25.2v	2amp	43*27*16(mm)	55g
MV-120A	120amp	5.6v-25.2v	2amp	43*27*16(mm)	60g
HV-45A	45amp	11.0v-46.2v	OPTO	45*29*8(mm)	50g
HV-80A	80amp	11.0v-46.2v	OPTO	45*29*16(mm)	65g

Basic installation guide

The installation of these ESC's is very simple & much likes any other controller on the market.

Connect the ESC to your receiver using the servo lead, ensuring that it is plugged into the correct receiver channel (JR ch1, Futaba ch3).

Attach your motor to the 3 wires on the ESC either by using connectors or by soldering the wires together directly - the motor direction can be reversed by either: swapping any two wires or by programming if necessary.

You will also need to add your own connectors to attach to the battery. Please ensure that the connectors are rated suitably for your ESC & battery.

Take care to ensure the correct polarity of the battery connections - if these are reversed the controller will be damaged.

It is advisable to have as much airflow as possible over your ESC to help keep it cool.

Make sure that you don't apply more than the recommended maximum current to the ESC as this may permanently damage it.

Advanced installation guide

The ESC also can be programmed   and operated in computer , there have some other special features, such as test the power system's RPM, more customer choice etc.

If you want get more messages, please visit the website http://www.ASSAN.cn

Initial setup of the ASSAN ESC for normal use

✓ Turn on the transmitter.
✓ Make sure the throttle is at zero.
✓ Connect the battery to the ESC to turn it on.
✓ You should now hear a beep & the LED on the esc will flash once. The ESC will now pause for 2 sec's & then beep & flash again, - this time it will either beep/flash once or twice depending on whether your brake is enabled or not.
✓ (Single beep/flash means no brake & a double beep/flash means the brake is on - see programming Table C below)
✓ Your speed controller is now ready for normal use.

Using some of the ESC features

BEC - the Battery Elimination Circuit supplies power to your receiver, eliminating the need for a separate receiver pack. If you wish to disable to the BEC, carefully cut the red wire in the trio of receiver wires - simply use a pair of wire cutters to remove a section of the red wire, ensuring that you insulate the cut wire with some electrical tape or something similar.
NOTE：The BEC is available ONLY below 3 cells Li-poly input. When at 4 cells Li-poly battery, please take isolate battery or UBEC to power the Rx and servos.

Low Voltage Cutoff - The power to the motor will be cut when the input voltage drops below a programmed cutoff voltage for more than half a second. It is advisable to select the hard cutoff in the programming menu for normal use.

HV-Series signal lead - connect HV-Series unit long signal lead into the throttle channel on your receiver, the short one is for computer connect only. Connect your isolate power to receiver's battery port. Don't operate HV-Series by a servo tester, because it could happened that motor will do some short starts in reason of some incorrect "throttle impulses". For this we strongly recommend to only using receivers from relevant and reliable manufactories.

Loss of transmitter signal or excessive interference will result in the motor cutting out. If this happens, once the radio signal has become active again, the ESC can be restarted. Hold the throttle in the off position for four seconds - it will then be running again as normal.

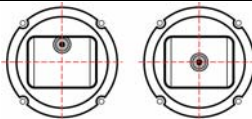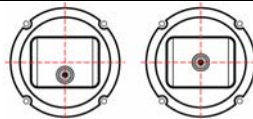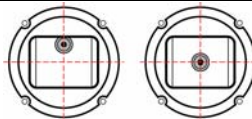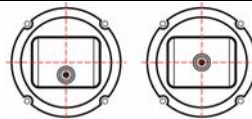The LED on the ESC will light up when full throttle has been reached.

Programming the ASSAN ESC

To enter programming mode:

1 - Make sure that the ESC is switched off with the power disconnected.

2 - Turn the transmitter on & move the throttle fully up (full throttle).

3 - Connect the battery to the ESC

4 - After about 2 seconds the ESC will emit a single beep & the LED will flash once - after a gap of 5 seconds you will hear 4 short beeps & 6 long beeps - these will repeat. Programming mode is now active.

5 - The long beeps represent settings that you can program - to choose one of these, move the throttle fully down on the desired beep/setting - see table A Programming continued.

6 - To accept a setting, move the throttle stick to the maximum position on the beep corresponding to the setting that you want to choose.

7 - When you have set your chosen value from any of the tables below (B-F), you will go back to the Menu at Table A so you can either choose another parameter to program or exit programming mode.

Default values are indicated as '*'

Stick Placement in Programming Mode:

①	②	③	④
Attach Battery 1 beep/1 flash enter programming mode ESC Beeps 6 long beeps for menu options	After ESC Beeps the desired menu selection, move throttle stick to throttle down/off position	To choose a setting in selected menu, move stick to full throttle	After ESC Beeps the desired menu selection, move throttle stick to throttle down/off position To exit move throttle stick down after sixth beep

TABLE A

MENU

ESC Action	Setting	ESC Reaction	Next
Four short "beep"			
1st Long Beep	Low Voltage Cutoff	1 Beep	See Table B
2nd Long Beep	Brake On/Off	2 Beeps	See Table C
3rd Long Beep	Timing Advance	3 Beeps	See Table D
4th Long Beep	Cutoff Type	4 Beeps	See Table E
5th Long Beep	Motor Direction	5 Beeps	See Table F
6th Long Beep	Exit Programming Mode	2 Sec pause – then Initialize	The ESC is ready to use!

TABLE B-Ⅰ

LOW VOLTAGE (LV-Series ESC)

ESC Action	Setting	Recommended For	ESC Reaction
One Short Beep		(Entering Programming Mode)	
1st Long Beep	4.8V Cutoff Voltage	6 cell Ni-MH packs	1 Beep Back to Table A
2nd Long Beep	* 5.6 V Cutoff Voltage	7 cell Ni-MH or 2 cell Li-po(2.8V/Cell)	2 Beeps Back to Table A
3rd Long Beep	6.0 V Cutoff Voltage	8 cell Ni-MH or2 cell Li-po(3V/Cell)	3 Beeps Back to Table A
4th Long Beep	7.2 V Cutoff Voltage	9 cell Ni-MH	4 Beeps Back to Table A
5th Long Beep	8.4 V Cutoff Voltage	10 cell Ni-MH or 3 cell Li-po(2.8V/Cell)	5 Beeps Back to Table A
6th Long Beep	9.0 V Cutoff Voltage	12 cell Ni-MH or 3 cell Li-po (3V/Cell)	6 Beeps Back to Table A
7th Long Beep	11.2 V Cutoff Voltage	4 cell Li-po(2.8V/Cell)	7 Beeps Back to Table A
8th Long Beep	12.0 V Cutoff Voltage	4 cell Li-po(3V/Cell)	8 Beeps Back to Table A

NOTE:

Please see MV-Series and HV-Series ESC cutoff voltage setting at **TABLE B-Ⅱ & B-Ⅲ**

TABLE C

BRAKE ON/OFF

ESC Action	Setting	ESC Reaction
Two Short Beep		
1st Long Beep	* Brake off	1 Beep Back to Table A
2nd Long Beep	Brake ON	2 Beeps Back to Table A

TABLE D

TIMING ADVANCE

ESC Action	Setting	Recommended For	ESC Reaction
Three Short Beep		(Entering Programming Mode)	
1st Long Beep	4^0-10^0	2 or 4 pole motor or out runner motor	1 Beep Back to Table A
2nd Long Beep	* 10^0-20^0	6 or 8 pole motor	2 Beeps Back to Table A
3rd Long Beep	20^0-30^0	12 or more pole motor	3 Beeps Back to Table A

TABLE E

CUTOFF TYPE

ESC Action	Setting	ESC Reaction
Four Short Beep		
1st Long Beep	Hard Cutoff	1 Beep Back to Table A
2nd Long Beep	*** Soften Power**	2 Beeps Back to Table A

TABLE F

MOTOR DIRECTION

ESC Action	Setting	ESC Reaction
Four Short Beep		
1st Long Beep	*** Motor Normal Direction**	1 Beep Back to Table A
2nd Long Beep	Reverse Motor Direction	2 Beeps Back to Table A

✧ TABLE B-II

LOW VOLTAGE (MV-Series ESC)

ESC Action	Setting	Recommended For	ESC Reaction
One Short Beep		(Entering Programming Mode)	
1st Long Beep	4.8V Cutoff Voltage	6 cell Ni-MH packs	1 Beep Back to Table A
2nd Long Beep	5.6 V Cutoff Voltage	7 cell Ni-MH or 2 cell Li-po(2.8V/Cell)	2 Beeps Back to Table A
3rd Long Beep	6.0 V Cutoff Voltage	8 cell Ni-MH or2 cell Li-po(3V/Cell)	3 Beeps Back to Table A
4th Long Beep	7.2 V Cutoff Voltage	9 cell Ni-MH	4 Beeps Back to Table A
5th Long Beep	8.4 V Cutoff Voltage	10 cell Ni-MH or 3 cell Li-po(2.8V/Cell)	5 Beeps Back to Table A
6th Long Beep	*** 9.0 V Cutoff Voltage**	12 cell Ni-MH or 3 cell Li-po (3V/Cell)	6 Beeps Back to Table A
7th Long Beep	11.2 V Cutoff Voltage	4 cell Li-po(2.8V/Cell)	7 Beeps Back to Table A
8th Long Beep	12.0 V Cutoff Voltage	4 cell Li-po(3V/Cell)	8 Beeps Back to Table A
9th Long Beep	14.0V Cutoff Voltage	5 cell Li-po(2.8V/Cell)	9 Beeps Back to Table A
10th Long Beep	15.0V Cutoff Voltage	5 cell Li-po(3V/Cell)	10 Beeps Back to Table A
11th Long Beep	16.8V Cutoff Voltage	6 cell Li-po(2.8V/Cell)	11 Beeps Back to Table A
12th Long Beep	18.0V Cutoff Voltage	6 cell Li-po(3V/Cell)	12 Beeps Back to Table A

TABLE B-Ⅲ

LOW VOLTAGE (HV-Series ESC)

ESC Action	Setting	Recommended For	ESC Reaction
One Short Beep		(Entering Programming Mode)	
1st Long Beep	12V Cutoff Voltage	4 cell Li-po(3V/Cell)	1 Beep Back to Table A
2nd Long Beep	15.0V Cutoff Voltage	5 cell Li-po(3V/Cell)	2 Beeps Back to Table A
3rd Long Beep	18.0V Cutoff Voltage	6 cell Li-po(3V/Cell)	3 Beeps Back to Table A
4th Long Beep	21.0V Cutoff Voltage	7 cell Li-po(3V/Cell)	4 Beeps Back to Table A
5th Long Beep	24.0V Cutoff Voltage	8 cell Li-po(3V/Cell)	5 Beeps Back to Table A
6th Long Beep	* 27.0V Cutoff Voltage	9 cell Li-po(3V/Cell)	6 Beeps Back to Table A
7th Long Beep	30.0V Cutoff Voltage	10 cell Li-po(3V/Cell)	7 Beeps Back to Table A
8th Long Beep	33.0V Cutoff Voltage	11 cell Li-po(3V/Cell)	8 Beeps Back to Table A

Note: The customer choice can be only used in computer interface software. Through this way, you can setting the cutoff voltage by yourself. The step is 0.1v up and down.

ASSAN ESC Trouble Shooting Guide

Possible Problem	Solution
Speed control does not arm	Make sure the ESC lead is plugged into the correct port on the receiver.
	Throttle is reversed. Go to your radio's servo reversing section and reverse the throttle channel.
	Check that all sub-trims are set to zero and end points are set to + - 100% (the radio's maximum values).
	Make sure the transmitter is turned on.
	Make sure the throttle stick is in the Throttle Down/Off position.
	Check all connector solder joints for proper connections. Re-solder any joints that appear weak or faulty.
	Check for any broken or chaffed wires on the lead running to the receiver.
Speed Control appears to have no power	Make sure the battery is plugged into the speed control.
	Make sure the battery is charged.
	Check for a burnt smell or discoloration of any of the components on the speed control.
	Check battery polarity.
Motor Cuts out shortly after start up (2-30 seconds)	Make sure battery is charged.
	Re-adjust the low voltage cut-off point on the ESC.
Motor is running backwards	Swap any two motor wires.
	Reverse the motor rotation using the ESC Programming Mode.
	Reverse the motor rotation using the USB Cable and ESC Config Software.