Boat32 ESC USER MANUAL

01 DECLARATION:

Thank you for purchasing VGOOD Boat32 ESC! Brushless power system can be very dangerous. Any improper use may cause personal injury and damage to the product and related devices. We strongly recommend reading through this user manual before use.

Because we have no control over the use, installation, or maintenance of this product, no liability may be assumed for any damage or losses resulting from the use of the product. We do not assume responsibility for any losses caused by unauthorized modifications to our product. For the latest specifications and use details, please visit our company website: www.vgoodrc.com

02 NOTES:

1. Make sure the ESC is matching with your RC boat, such like battery, motor and the boat size to avoid any overload issues.
2. Make sure connection is correct and insulation is done to avoid any damage.
3. After using, please disconnect ESC with battery

03 FEATURES：

- 32BIT MCU, very responsive and smooth, especially for racing RC boat.
- Powerful switching BEC and voltage adjustable.
- Waterproof, safe more and enjoy more.
- Premium Mosfets and ceramic capacitors.
- Powerful throttle control: throttle rate, throttle curve and throttle softening values can be adjustable.
- Advanced motor control algorithm drives perfectly with low speed and get a very powerful acceleration performance.
- Multiple protections: Low voltage protection, overheat protection and throttle out of control protection.
- Easy to use and keep upgrading.

04 SPECIFICATIONS:

Model	B32 60A SBEC	B32 80A SBEC	B32 100A SBEC	B32 150A SBEC	B32 120A HV SBEC
Current	60A	80A	100A	150A	120A
Burst Curent	90A	110A	130A	180A	150A
LIPO CELLS	2-6S	2-6S	2-6S	2-6S	6-14S
BEC OUTPUT	5.5V / 6A	5.5V / 6A	5.5V / 6A	5.5V / 6A	5.5V / 6A
Size(mm)	60*36*26	60*36*26	60*36*26	78*44*30	78*44*30
Wight(g)	90	100	110	150	180
P/U port	Program parameters and upgrade firmware through throttle wires				

05 Connection Diagram
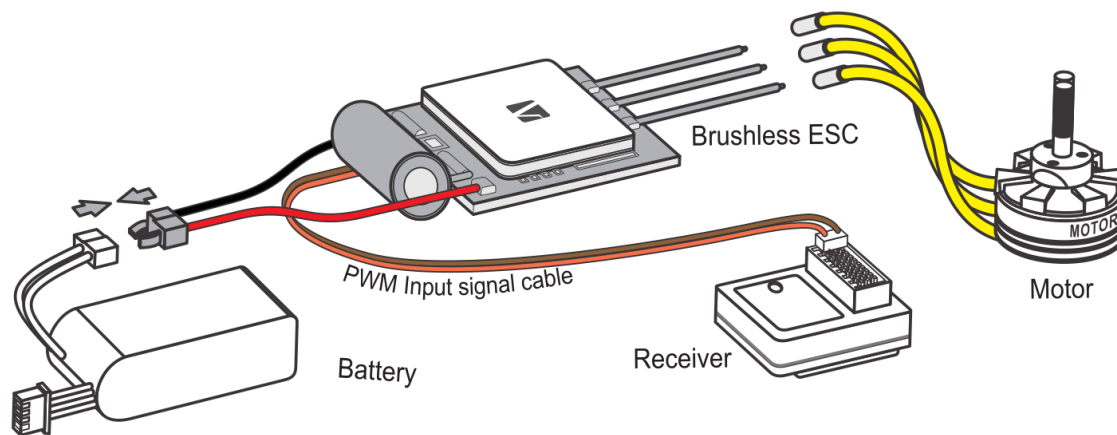
06 ESC setup

1. Setting with LCD program box

Connect ESC with program box through program cable(male JR-male JR), power on ESC, LCD will show "Connect OK" and show "VGOOD BOAT", press any key to go to setting UI.

Setting parameters

Item key is to select items, value key is to select parameters, OK key is to submit and write parameters into ESC, Read key returns to previous menu.

Read out record data

When connected ESC with program box, the last item X: is running data record, press Value key to show the four parameters one by one, they are: Min Voltage, ESC temperature, Motor temperature and Max RPM. Record data only can be read, can't be modified.

2. Setting with VGOODSuite

Connect ESC with PC through VGOOD USB cable, open VGOODSuite in your computer, select COM port, click "Connect", power on ESC, you will see green and red light flash there, this means connection is succeed

Click:"Readpara ", you can read out and modify parameters, after that, you can click : "Writepara" to

restore parameters you have selected.

And you can save, red parameter profile under "File"menu.

07 Parameters table

General Setting	A1	Run Mode	FWD/Brk	FWD/Brk/Rev	FWD/Rev Direct			
	A2	Low voltage cutoff	No protect	Auto	Custom			
	A3	ESC Thermal Protect	105℃//221F	125℃//257F	No Protect			
	A4	Motor Thermal Protect	105℃//221F	125℃//257F	No Protect			
	A5	BEC Voltage	5.0V	5.5V	6.0V	7.4V	8.0V	
	A6	Max Reverse Strength	25%	50%	75%	100%		
	A7	PWM Frequency	8K	12K	16k	20K	24K	32K
	A8	Sensor mode	Full sensored	Sensor/Sensorless hy				
	A9	Motor Reverse	CW	CCW				
	B5	Beeps	OFF	ON				
	B6	Motor Rev Rate	0~8	8				
Throttle Control	C1	Throttle Rate	1~30	10				
	C2	Neutral Width	10~80us	60us				
	C3	Min Power	1~8	2				
	C4	Throttle Profile	concave++	concave+	Linear	convex+	convex++	
	C5	Softning Value	0~7	0				
Timing settings	D1	Timing	Dynamic	0°~30°				
	D2	BoostTiming	0~30	0				
	D3	BoostMode	RPM	throttle				
	D4	Boost Start RPM	500~35000RPM	20000RPM				
	D5	Boost END RPM	3000~60000RPM	10000RPM				
	D6	Turbo Timing	0~30	2				
	D7	Turbo Delay	0~1s	0.1				
	D8	Turbo Increase rate	1°~12°/0.1s	4°/0.1s				
	D9	Turbo Decrease Rate	1°~12°/0.1s	4°/0.1s				

A1: RunMode

Forward/Brake：

This is racing mode, under this mode, motor only can run forward, push throttle above neutral, it runs forward, push throttle under neutral, it brakes.

FWD/Brake/Reverse:

This is training mode, when the first time to push throttle to backward range, it brakes, not run backward, only when you push back throttle to neutral again, then if you push throttle to backward range, it will run backward.

FWD/Reverse Direct:

This mode is mostly used for crawler, when you push throttle from forward range to backward range, it will reverse directly; work the same if you push throttle from backward range to forward range.

A2：Low Voltage Cutoff

This is mainly to protect battery from being destroyed by over discharged, if voltage is under setting value, it will reduce power to 1/4 gradually within 3S and yellow light flashes means it's at low voltage status.

No Protection:

For racing, we suggest you to set with no protection to avoid power to be decreased or cutoff, but please

note this may destroyed your battery☺

Auto:

If you set with Auto, ESC will detect battery cells automatically and set cutoff voltage each cell with 3.3V, for example if ESC detects 3 cells, cutoff voltage for the battery will be set with 9.9V.

Custom:

You can set battery cutoff voltage from 5~25V, for example if you hope to set 3.0V for each cell and you are using 2 cells battery; you can set cutoff voltage with 6.0V.

A3: ESC Thermal Protect

If ESC temperature reaches your set protect temperature, ESC will reduce output gradually, when temperature is become normal, ESC will come back with full power. Yellow light double-flashes warn temperature is too high.

A4: Motor Thermal Protect

If motor temperature reaches your set protect temperature, ESC will let motor reduce output gradually, when temperature is become normal, motor will come back with full power. Yellow light tri-flashes warn temperature is too high.

Please note if not connected with sensor cable or no sensor, this feature is invalid.

A5: BEC Voltage

This series boat ESC some items are fixed with 5.5V as default, not programmable, if you need 7.4V or adjustable, please get confirmation from us before you make order.

A6: Max Reverse Strength

This is to set backward RPM percentage, we suggest you to use a smaller one, as if backward speed is too fast may be hard to control your boat.

A7: PWM Frequency

Frequency is higher, more smooth for your motor and also will increase ESC temperature, please select the suitable value accordingly.

A8: Sensor Mode

Full Sensored:

When ESC has been sensored connected, it always works at sensored mode, if not connected with sensored cable, it works with sensorless mode.

Sensored/Sensorless Hybrid:

When ESC has been sensored connected, lower RPM will work at sensored mode, high RPM will work at sensorless mode

If not connected with sensor cable, it will work at sensorless mode.

Please note sensorless ESC is always works at sensorless mode.

A9: Motor Reverse

When using sensorless motor, if you want to change motor spin direction, you can exchange any two of the three motor wires, you can also change with this selection.

When using sensored motor and under sensored mode, as the three phase wires must fixed connected, you can't change motor spin direction by exchange wires, but you still can change with this selection.

B5: Beeps

OFF：Beeps off

ON: Beeps on

B6: Motor Rev Rate

This is to adjust switching rate in reverse, the bigger value, and the faster changed.

C1: Throttle Rate

This is to Control acceleration of throttle, lower means acceleration is slower, higher means acceleration is higher.

C2: Neutral Width

This is to set width of neutral, to that to make a better experience for different racers.

C3: Min Power

This is to set min power of ESC, when starting motor with a small throttle, the bigger of the value set, the faster of motor speed.

C4: Throttle Profile

This is to set throttle curve, you can choose according your requirements, the default value is Linear. Concave means starting slower, convex means starting faster.

C5：Softening Value

This is to soften throttle curve in MODIFY racing, 0 means no softening effect, 7 means strong softening effect.

D1: Timing

Set as Dynamic, ESC will active Boost and Turbo function, or you can set timing manually.

D2: Boost Timing

Set with Boost Timing, timing will change corresponding with RPM or throttle accordingly D3.

D3: Boost Mode

RPM:

When set as RPM, boost timing will change according RPM.

Throttle:

When set as Throttle, boost timing will change according throttle.

D4: Boost (Boost Start RPM)

This is to set start RPM to active boost timing, ex. If set at 5000, only RPM above 5000 then active boost timing.

D5: Boost End RPM

This is to set boost timing end RPM, ex. If boost end timing has been set at 15°, Boost END RPM is set at 2000 RPM, when RPM reach 20000m Boost Timing will be set as 15°, if RPM lower than 2000, boost timing will change accordingly RPM.

D6: Turbo Timing

Turbo time will only be activated at max throttle. It is to activate motor max power.

D7: Turbo Delay

This is to set how much time that max throttle should be hold to activate turbo timing

D8: Turbo Increase Rate

This is to set Turbo timing increase rate when Turbo timing is activated.

D9: Turbo Decrease Rate

This is to set turbo timing decrease rate when Turbo timing is deactivated because of not at full throttle.

Warning! Boost timing and Turbo Timing may help in racing, but at the same time it may burn your ESC or motor!

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