HOBBYWING®

SEAKING

USER MANUAL

Brushless Electronic Speed Controller

SEAKING 160A V4 RTR
SEAKING 120A V4 RTR
SEAKING 90A V4 RTR
SEAKING 60A V4 RTR
SEAKING 30A V4 RTR

20250605

HW-SMA714DUL00

01 Disclaimer

Thank you for purchasing this product! Please read this user manual carefully before use, once you use the product, it is understood that you have read and agreed with all the content. Brushless power systems can be very dangerous and any improper use may cause personal injury and damage to the product and related devices, so please strictly follow the instruction during installation and use.Because we have no control over the use, installation, or maintenance of this product, no liability may be assumed for any damages or losses resulting from the use of the product. We do not assume responsibility for any losses caused by unauthorized modifications to our product. We have the right to modify our product design, appearance, features and usage requirements without notification. We are only responsible for our product cost and nothing else as result of using our product.

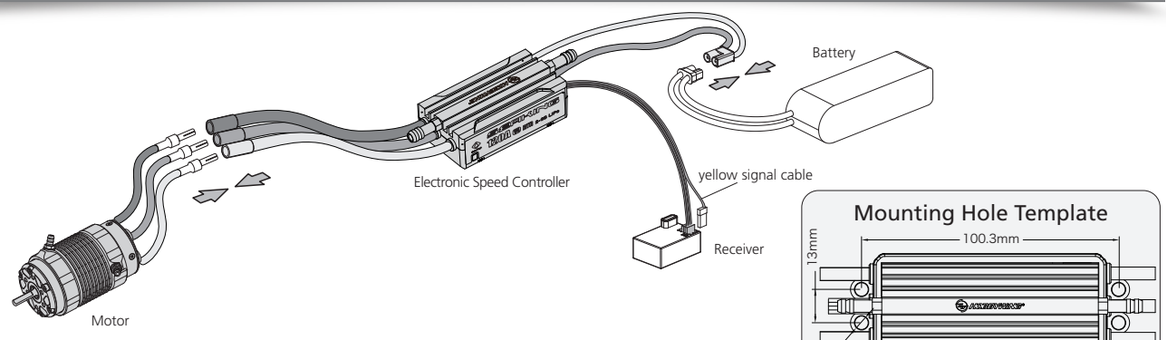
02 Warnings

- Ensure all devices in the system are connected correctly to prevent any damage to the system.
- It is important to ensure that all wires and connectors soldered are properly secured. A good soldering station is recommended to do such a job to avoid short circuits, floating solder joints and overheating.
- Do not attempt to drive two brushless motors with a single ESC, as this may cause damage to the ESC.
- Please hold the boat in the air and ensure that the propeller can free spin and my not catch body parts or objects during setup, in order to avoid accidents.
- The battery must be disconnected after use. There is a small draw even when the system is off, and will eventually fully drain the battery. This may cause damage to the ESC, and will NOT BE COVERED UNDER WARRANTY.

03 Specifications

MODEL	Cont. / Peak Current	LiPo Cells	BEC Output	Size (w/o water cooling pipe)	Weight(w / wires & output connectors)	Inner / Outer diameter of water cooling pipe	Programming Method	Boat Applicable
SEAKING 160A V4 RTR	160A/800A	3-8S	6V/7.4V,8A	91×41×26.4mm	220g	3.0/5.5mm	LED Program Box	Length≤120cm
SEAKING 120A V4 RTR	120A/500A	2-6S	6V/7.4V,8A	64.7×36.3×22.5mm	123.5g	3.0/5.5mm	LED Program Box	Length≤100cm
SEAKING 90A V4 RTR	90A/360A	2-4S	6V/7.4V,8A	60×36.3×22.5mm	115.6g	3.0/5.5mm	LED Program Box	Length≤80cm
SEAKING 60A V4 RTR	60A/200A	2-3S	6V/7.4V,4A	38.7×29×24.2mm	64.6g	2.0/4.0mm	LED Program Box	Length≤60cm
SEAKING 30A V4 RTR	30A/100A	2-3S	6V/7.4V,2A	32.8×26×18.3mm	33.9g	2.0/4.0mm	LED Program Box	Length≤45cm

04 Connections



SEAKING 160A V4 RTR

1. **Motor connection:**
   There are no wire sequencing requirements for the connection between the esc and the motor. If the motor rotates in the opposite direction,you can exchange two of the motor wires.
2. **Connect the water-cooling pipe:**
   Connect the corresponding water-cooling pipes to the esc according to the wiring of the water-cooling pipe inside the boat. It is recommended to use clamps or ties to secure the water cooling tube to prevent loosening.
3. **Recevier connection:**
   Insert the throttle cable of the ESC into the throttle channel of receiver. The red wire of throttle cable provides the BEC voltage to receiver and steering servo, do not supply external power to receiver, otherwise the ESC may be damaged. If need to supply external, unpin/disconnect the red wire with the throttle cable, insulate it and secure it away.
4. **Battery connection:**
   Make sure that the (+) pole of the ESC is connected to the (+) pole of the battery and (-) to the (-), **the red wire is the positive pole, and the black wire is the negative pole. If the connection is reversed, the ESC will be damaged and will not be covered by the warranty.**

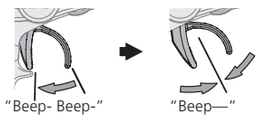
05 ESC Setup

1 Set the Throttle Range - ESC Calibration Process

The calibration must be done on the first use of the ESC, or if a new radio or receiver is installed, otherwise the esc may not work correctly. We strongly recommend to open the fail safe function of the transmitter, set the no signal protection of throttle channel ("F/S") to close the output or set the protection value to the throttle neutral position. Thus the motor can stop running if the receiver cannot receive the signal of the transmitter. The calibration steps are below.

1. Turn on the transmitter, ensure all parameters (D/R, EPA, ATL)on the throttle channel are at default (100%). For transmitter without LCD, please turn the knob to the maximum, and the throttle "TRIM" to 0. (If the transmitter without LCD, turn the knob to the middle point). **This step can be skipped if the radio's settings are default!**

2. If you are using a pistol-type transmitter:
   a) Pull the throttle trigger to the full throttle position, then connect the ESC to the battery pack; 2 seconds later, a row of "Beep- Beep-" can be heard, that means the full throttle position has been confirmed.
   b) Release the throttle trigger to the neutral position, a long "Beep—" can be heard, that means the neutral position has been confirmed.
3. If you are using a board-type transmitter:
   a) Push the throttle stick to the full throttle position, then connect the ESC to the battery pack; 2 seconds later,a row of "Beep- Beep-" tone can be heard, that means the full throttle position has been confirmed.
   b) If you want to set it (/the throttle range) to half-range, please move the throttle stick to the neutral position, a long "Beep—"can be heard, that means the neutral position has been confirmed. If you want to set it to full-range (In such a case, the boat cannot run backward), please pull the throttle stick to the bottom position, a long "Beep—" can be heard, that means the bottom position has been confirmed.



Note: When the motor emits "Beep" tone(s), the red LED in the ESC flashes at the same time.



2 Power on/off and beep instructions

1. Move the throttle trigger/stick to the zero throttle position, then turn on the transmitter.
2. Connect the battery to the ESC. The motor emits several "Beeps"to report the cells number in your Lipo battery pack. Please make sure that the number is correct. A short "beep-"means the #1, and a long"beep—"means the #5. For example: "beep-beep-"means 2 cells. "beep—, beep-"means 6 cells.
3. One second later, the motor emits a long "beep—"to confirm the zero throttle position.
4. You can start the motor.

3 Instruction for programmable items

The highlighted options are the default settings of the ESC.

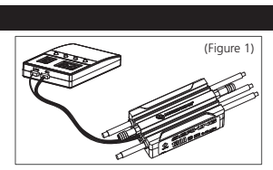
No.	Item	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
1	Running Mode	Forward Only	*Forward and Reverse*						
2	Max.Reverse Force	*25%*	50%	75%	100%				
3	LiPo Cells	*Auto*	2S	3S	4S	5S	6S	7S	8S
4	Cutoff Voltage	Disabled	2.6V/Cell	2.8V/Cell	3.0V/Cell	*3.2V/Cell*	3.4V/Cell	3.6V/Cell	
5	BEC Voltage	*6.0V*	7.4V						
6	Timing	10.0°	12.5°	*15.0°*	17.5°	20.0°	22.5°	25.0°	

Note: Regarding the "LiPo Cells" item, SEAKING 30A/60A V4 RTR supports 2-3S adjustable, SEAKING 90A V4 RTR supports 2-4S adjustable, SEAKING 120A V4 RTR supports 2-6S adjustable, SEAKING 160A V4 RTR supports 3-8S adjustabla.

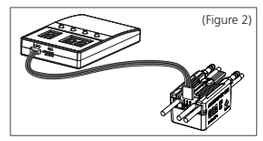
1. Running Mode:
   Option1: Forward Only
   In this mode, only single direction operation is provided without reverse.
   Option2: Forward and Reverse
   In this mode, the motor can run in both directions.
2. Max. Reverse Force:
   Refers to the reversing speed. Please make sure to confirm whether the transmission system of the boat supports when setting it. It is recommended to use a small reverse force generally.
3. LiPo Cells:
   Set the correct value according to the actual number of LiPo batteries used. The default is automatically calculated. If the same cells of LiPo batteries are usually used, it is recommended to set this parameter to avoid misjudging, for example, 3S LiPo without power may be incorrectly calculated as fully charged 2S LiPo.
4. Low Voltage Cut-Off:
   This function is mainly to prevent excessive discharge of lithium batteries causing damage. The ESC monitors the battery voltage at all times, and once the voltage falls below the set threshold, the power output will be cut off, and the throttle trigger needs to be returned to the neutral/zero position, then 50% of the output power can be restored, after running for 5 seconds, the power will be cut off again, such a cycle. If the battery voltage is below 3.0V/Cell, only 25% of the power can be restored. When the voltage protection is entered, the red LED flashes in the "☆, ☆, ☆".
   Note: If the discharge capacity of the battery can not meet the load of the boat, and the battery voltage is easily restored to above the set value after triggering the low voltage protection, the esc will allow the maximum 50% output power to continue running.
5. BEC Voltage:
   BEC voltage support 6V/7.4V. Generally, 6.0V is suitable for standard servos, while 7.4V is suitable for high-voltage servos. Please set according to the servo specifications.
   Note: Do not set the BEC voltage above the maximum operating voltage of the servo, as this may damage the servo or even the ESC.
6. Timing:
   This feature has three functions:
   1) Compatible with different motors, some motors may work abnormally under the default value and need to be adjusted to the appropriate timing for normal operation;
   2) Adjusting the appropriate timing can improve the efficiency of the power system;
   3) The motor speed can be fine tuned, and the higher the timing, the higher the speed (and the higher the current); Whether there will be an increase in speed is related to factors such as the motor and load, and the specific effect depends on actual testing.

4 Programming method

- **This system supports the use of LED Program Box for parameter settings.**
  Connect the throttle cable(white/red/black) to the interface marked with "- +" on the LED Program Box (red to positive, black to negative), and at the same time, connect the yellow signal cable to the interface marked with "- +⎍" on the LED Program Box(the yellow wire corresponds to the signal interface). Finally, connect the battery to the esc. The "ITEM" and "VALUE" button on the programming card can quickly select the programming items and parameter values, press "OK" button to save the new parameters in ESC. (Refer to Figure 1)


(Figure 1)

- **For the SEAKING 60A V4 RTR ESC, due to its independent 3-pin programming interface, the method of connecting the program box is different from other ESCs. The connection method is as follows.**
  Connect the programming port marked with "- +⎍" on the ESC and the interface marked with "- +⎍" on the program box using a cable with JR plug at both ends, and then power on the ESC. (Refer to Figure 2)


(Figure 2)

5 Factory reset

Below are several ways to recover factory parameters:
The LED program card: Once the LED program card is connected to the ESC, press the "RESET" key and then press "OK" to save to restore the factory settings.

06 Explanation for LED status

1. **The run status indication:**
   1) The throttle trigger is in the zero throttle position and the LED lights are off.
   2) When advancing, the red light is constantly on, and the blue light will also come on when up to the full throttle (100%).
   3) When reversing, the red light is constantly on; If the reversing force is set to 100%, the blue light will also come on when up to the full reverse(100%).
2. **What the LED means when the relevant protection function is triggered:**
   1) The red light flashes (single flash, "☆, ☆, ☆"): enters the low voltage protection state. The phenomenon after triggering low voltage protection is detailed in the explanation of parameter item 4 (Low Voltage Cut-Off).
   2) The blue light flashes (single flash, "☆, ☆, ☆"): enters the esc overheat protection state. The output power will be reduced to 50% after triggering the overheat protection, and the full power output can be automatically restored after the temperature drops to a certain value.
   3) The blue light flashes (three flashes, "☆☆☆, ☆☆☆, ☆☆☆"): enters the current protection state. The esc will cut off the output after triggering the over-current protection, and the output can be automatically restored when the throttle trigger back to the neutral/zero throttle position.
   4) The blue light flashes (five flashes, "☆☆☆☆☆, ☆☆☆☆☆, ☆☆☆☆☆"): enters the capacitor overheat protection state. The output power will be reduced to 50% after triggering the capacitor overheat protection, and the full power output can be automatically restored after the temperature drops to a certain value.
   Notes: The SEAKING 30A/60A V4 RTR ESC no capacitor overheat protection.

07 Trouble Shooting

Troubles	Possible Causes	Solution
The light does not turn on after power-up, the motor does not start.	The battery voltage is not output to the ESC.	Check the battery,and whether the connection between battery and esc is good and whether the plug is soldered well.
The motor does not start after power-up, with a "beep-beep-, beep-beep-" warning tone accompanied by a flashing red light (approximately 0.5 seconds for each set of two-tone intervals) .	The battery pack voltage is not within the range of support.	Check the battery voltage or change the battery for testing.
After power on, the red light flashes quickly.	1. The throttle signal is not detected by the ESC; 2. The neutral point of the ESC is not calibrated correctly.	1. Check if the throttle wire is plugged into the correct channel. Check if your transmitter is turned on. Check if the receiver ok. 2. Recalibrate the throttle travel.
The boat is going in the reversed direction when the forward throttle is applied.	The motor rotation direction is incorrect.	Swap any two wire connections between the ESCand motor.
The motor suddenly stopped or significantly reduced the output in running.	1. Possible interference; 2. The ESC enters into low-voltage protection state; 3. The ESC enters into overheat protection state.	1. Check the cause of the interference in the receiver and check the battery level of the transmitter; 2. Replace the battery if red light keeps flashing; 3. The blue light continues to flash for temperature protection, please continue to use after the ESC temperature is reduced (it is recommended to reduce the load on the boat).
The motor stuttered and unable to start.	1. Poor connection; 2. The ESC or motor was damaged.	1. Check if all the connectors are well soldered; 2. You can change the ESC/motor for testing to confirm.
Going forward normally, but not reverse.	1. The parameter item "Running Mode" is set incorrectly; 2. The throttle range is incorrect; 3. The ESC is damaged.	1. Set the "Running Mode" to "Forward and Reverse"; 2. Reset the throttle range(ESC Calibration); 3. Contact the distributor.
The throttle travel setting could not be completed.	The ESC did not receive the correct throttle signal.	1. Check whether the throttle cable is correctly connected to the receiver. 2. If the servo works normally,you can connect the throttle cable of esc to the steering channel to have a test, or change the transmitter/receiver system for test directly.

HOBBYWING®

SEAKING

船用无刷电子调速器 使用说明书

SEAKING 160A V4 RTR
SEAKING 120A V4 RTR
SEAKING 90A V4 RTR
SEAKING 60A V4 RTR
SEAKING 30A V4 RTR

20250605

HW-SMA714DUL00

01 声明

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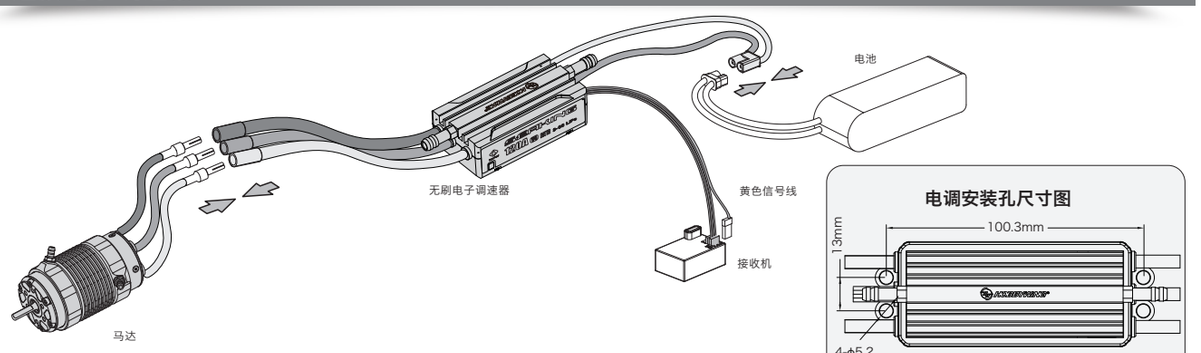
02 注意事项

- 电调与相关连接部件连接前，请确保所有电线和连接部件绝缘良好，短路会毁坏电调。
- 请务必仔细连接好各部件，若连接不良，您可能不能正常控制模型船，或出现设备损坏等其他不可预知的情况。
- 使用此电调前，请认真查看各动力设备以及船模说明书，确保动力搭配合理，避免因错误的动力搭配导致损坏电调。
- 请勿尝试单个电调驱动两个无刷马达，否则将会导致电调出现故障。
- 调试时请将模型船架起，确保船桨不会碰到人或其他物体，以免发生安全事故。
- 使用完毕后，切记断开电池与电调的连接。长时间连接会导致电池最终完全放电；进而导致电池或电调出现故障；我们不对因此而造成的任何损害负责。

03 产品规格

型 号	持续/峰值电流	锂电节数	BEC输出	尺寸（不含水冷嘴）	重量（含线材和输出插头）	水冷嘴内径/外径	参数设定方法	应用
SEAKING 160A V4 RTR	160A/800A	3-8S	6V/7.4V,8A	91×41×26.4mm	220g	3.0/5.5mm	LED设定盒	船长≤120cm
SEAKING 120A V4 RTR	120A/500A	2-6S	6V/7.4V,8A	64.7×36.3×22.5mm	123.5g	3.0/5.5mm	LED设定盒	船长≤100cm
SEAKING 90A V4 RTR	90A/360A	2-4S	6V/7.4V,8A	60×36.3×22.5mm	115.6g	3.0/5.5mm	LED设定盒	船长≤80cm
SEAKING 60A V4 RTR	60A/200A	2-3S	6V/7.4V,4A	38.7×29×24.2mm	64.6g	2.0/4.0mm	LED设定盒	船长≤60cm
SEAKING 30A V4 RTR	30A/100A	2-3S	6V/7.4V,2A	32.8×26×18.3mm	33.9g	2.0/4.0mm	LED设定盒	船长≤45cm

04 连接电子调速器



SEAKING 160A V4 RTR

请参照接线说明及接线图正确接线：

1. 连接电机：
电调与电机相连无严格的线序要求，电调的三根相线可以与电机的三线随意对接，若出现电机转向相反，可以任意交换两条电机线来解决。

2. 连接水冷管：
根据模型船内部水冷管走线，将对应的水冷管接到电调水冷嘴上。为防止运行过程中水冷管松脱，建议套好水冷管后使用扎带进行水冷管固定。

3. 连接接收机：
将电调的油门控制线接入接收机的油门通道（通常为TH或CH2通道）。因电调油门线会输出BEC电压给接收机及舵机，所以请勿给接收机额外供电，若需要额外供电，请断开电调油门线中的红色线。

4. 连接电池：
电调的输入线有极性之分，接入电池时，请确保电调的正极与电池的正极相连，负极与负极相连，**红色线为正极，黑色线为负极。如果电调接反电将被损坏，因接反电而导致电调损坏是不享有保修服务的。**

05 设置电子调速器

警告！本系统功率非常强劲，为了您及周边他人的安全，我们强烈建议您在校准及设定该系统前将模型船架起，确保船桨不会碰到人和物！

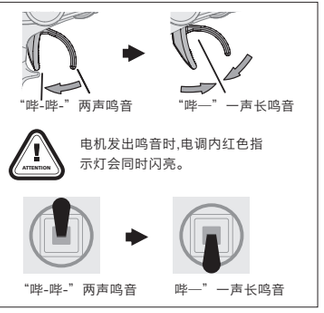
1 设定油门行程

电调第一次使用前或更换过遥控器/接收机，均需重设油门行程，不然可能会导致电调无法使用或误动作。 另外我们建议将遥控器油门通道的无信号保护（“F/S”）功能设置为关闭输出方式或将保护值设置为中点位置，使得当接收机无法收到遥控器信号后，电机能够停止运转。油门校准步骤如下图所示：

1. 打开遥控器，将油门通道的“D/R”、“EPA”、“ATL”等参数调到100%（如遥控器无显示屏，则将对应旋钮调到最大位置），油门通道的中点微调“TRIM”调为0（如遥控器无显示屏，则将对应旋钮调到中间位置）。**若遥控器为默认设置，可以不作此设置，直接进行下面的操作。**

2. 使用**枪式遥控器**时，油门行程校调方法如下：
将油门扳机拉到最大油门位置并保持，然后给电调接上电源，等待2秒，电机会发出“哔-哔-”两声鸣音，表示油门最高点已经被确认。这时松开油门,让油门回到中位，电机会发出“哔—”一声长鸣音，此时油门行程已设定完成。

3. 使用**板式遥控器**时，油门行程校调方法如下：
将油门摇杆推至最大油门位置并保持，然后给电调接上电源，等待2秒，电机会发出“哔-哔-”两声鸣音，表示油门最高点已经被确认。如果要设定为半油门行程，则将油门摇杆置回中点；如果要设定为全油门行程，则将油门摇杆拉至最低点（这种情况船将不具备后退操作），随后电机会发出“哔—”一声长鸣音，此时油门行程已设定完成。



2 开机过程说明

1. 打开遥控器，确保遥控器的油门扳机/摇杆处于零油门位置；
2. 给电调接上电池；电机会发出鸣叫音，表示所使用的锂电池节数，请确认鸣报的锂电池节数是否正确。一声短音“哔-”代表数字1，一声长音“哔—”代表数字5。例如:“哔-哔-”表示2节锂电；“哔—哔-”表示6节锂电。
3. 等待1秒，最后电机还会发出“哔—”一声长鸣音，表示确认了零油门位置。
4. 可以正常运行电机。

3 编程项目说明

下表中黑底白字的选项为可编程项目的默认值。

编号	参数项名称	参数1	参数2	参数3	参数4	参数5	参数6	参数7	参数8
1	运行模式	单向	*双向*						
2	最大倒车力度	*25%*	50%	75%	100%				
3	锂电节数	*自动*	2节	3节	4节	5节	6节	7节	8节
4	低压保护阈值	不保护	2.6V/节	2.8V/节	3.0V/节	*3.2V/节*	3.4V/节	3.6V/节	
5	BEC电压	*6.0V*	7.4V						
6	进角	10.0°	12.5°	*15.0°*	17.5°	20.0°	22.5°	25.0°	

备注：关于“锂电节数”参数项，SEAKING 30A/60A V4 RTR支持2-3S可调，SEAKING 90A V4 RTR支持2-4S可调，SEAKING 120A V4 RTR支持2-6S可调，SEAKING 160A V4 RTR支持3-8S可调。

1. 运行模式（Running Mode）：
选项1：单向（正转）
此模式下，船模仅能前进，不能倒退。
选项2：双向（正反转）
此模式下，船模既能前进，也能倒退。请确认船模的传动系统是否允许倒退。

2. 最大倒车力度(Max. Reverse Force)：
指油门扳机打到反向最大的位置所能产生的后退力度，选择不同的参数值可以产生不同的后退速度。设置此参数时请务必确认模型船的传动系统是否支持相应的倒车力度，否则可能损坏传动系统。一般情况下建议使用比较小的倒车力度。

3. 锂电池节数（LiPo Cells）：
根据实际所用锂电池节数设置正确的值。默认为自动判断。若通常使用相同节数的锂电池，建议手动设置该参数，可以避免实际使用过程中将没电的3S锂电池误判为充满电的2S锂电池。

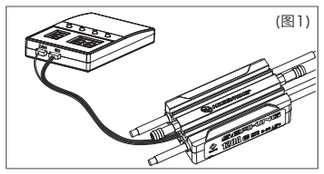
4. 电池低压保护阈值（Low Voltage Cut-Off）：
这项功能主要是防止锂电池过度放电而造成不可恢复的损坏。电调会时刻监视电池电压，一旦电压低于设定的阈值，将关断动力输出，需要将油门扳机回到零油门位置，又能以50%的输出功率继续运行，运行5秒后又将关断动力，需再次将油门扳机回到零油门位置，如此循环。若电池电压低于3.0V/Cell,则只能以25%的输出功率运行。触发低压保护后，红色LED会以“☆－，☆－，☆－”方式闪烁，请尽快将船靠岸，避免电池因过放而损坏。对于镍氢电池，建议将此项参数设置为“不保护”。
备注：若由于电池放电能力满足不了模型船负载，当触发低压保护后电池电压又容易恢复到设置值以上时，电调将允许最大50%的输出功率持续运行。

5. BEC电压（BEC Voltage）：
BEC电压支持6V/7.4V可调。一般6.0V适用于普通舵机，7.4V适用于高压舵机，请根据所用舵机规格设置合适的值。
备注：设置的BEC电压请勿超过舵机最高工作电压，否则可能损坏舵机甚至电调。

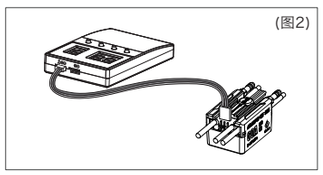
6. 进角（Timing）：
此功能有三个作用：
1）兼容不同的电机，某些电机在默认进角下可能会工作异常，需要调整到合适的进角方可正常工作；
2）调整合适的进角，可提升动力系统的效率；
3）可以微调电机转速，进角越高，则转速也越高（同时电流也会越大）；转速是否会有提升和电机、负载等因素均有关，具体以实测为为准。

4 编程方法

- **利用LED设定盒进行参数设置:**
电调处于断电状态,将白红黑油门线接到LED设定盒上方标示着“+ -”的接口(红正黑负),同时将黄色信号线接到LED设定盒上方标示着“ɲ+ -”的接口(黄色线对应信号接口)。然后将电调通电,数秒后该电调的各项参数即可显示出来。利用编设定盒上的“ITEM”和“VALUE”按键即可快速选择编程项目和参数值,然后按“OK”键后，新参数即可存入电调中。(参考图1)


(图1)

- **对于SEAKING 60A V4 RTR电调，由于电调上具有独立的3pin编程接口，因此其连接设定盒或的方法不同于其它几款电调，连接方法如下:**
电调处于断电状态，用一条两端带JR公头的排线将电调上标识着“- +ɲ”的编程口和设定盒上标识着“- +ɲ”的接口连接起来，然后给电调上电即可。（参考图2）


(图2)

5 恢复出厂参数设定

利用LED参数设定卡恢复出厂设置:
LED设定卡与电调连通后，按下“RESET”键,然后再按下“OK”保存,即可恢复出厂设置。

06 电调状态指示灯说明

1. 运行状态指示：
1）油门扳机处于中点区域，红蓝灯均熄灭。
2）前进时，红灯恒亮；当油门处于前进最大时，蓝灯也亮起。
3）倒车时，红灯恒亮； 若倒车力度设置为100%则当油门处于倒车最大时蓝灯也亮起。

2. 相关保护功能触发时，LED含义：
1）红灯持续闪烁（单闪，“☆，☆，☆”）：进入低压保护状态。触发低压保护后的现象详见参数项第4项（低压保护阈值）解释说明内容。
2）蓝灯持续闪烁（单闪，“☆，☆，☆”）：进入电调过热保护状态。触发电调过热保护后将降低到50%输出功率运行，待温度降低到一定值之后可自动恢复全功率输出。
3）蓝灯持续闪烁（三闪，“☆☆☆，☆☆☆，☆☆☆”）：进入电流保护状态。触发电流保护将关断输出，油门回到中点/零油门位置后将恢复输出。
4）蓝灯持续闪烁（五闪，“☆☆☆☆☆，☆☆☆☆☆，☆☆☆☆☆”）：进入电容过热保护状态。触发电容过热保护后将降低到50%输出功率运行，待温度降低到一定值之后可自动恢复全功率输出。
备注: SEAKING 30A/60A V4 RTR电调没有电容过热保护功能。

07 故障快速处理

故障现象	可能原因	解决方法
上电后指示灯不亮，电机无法启动。	电池电压没有输入到电调。	检查电池好坏以及电池与电调的连接是否良好。
上电后电机无法启动，发出“哔－哔－，哔－哔－”警示音且伴有红灯闪烁（每组双音间隔时间约0.5秒）。	电池组电压不在电调支持范围内。	检查电池组电压。
上电后红灯快速闪烁，电机不转	1. 电调未检测到油门信号； 2. 电调油门中点与遥控器不匹配。	1. 检查油门线是否插反、通道是否插错、控是否有开启； 2. 微调遥控器油门中点，重新校准油门行程。
遥控器正向加大油门，船反而倒退。	电机转动方向与船前进方向不一致。	交换电机三根线中任意两根线的位置。
电机转动过程中，突然停转或功率输出显著降低。	1. 接收机遇到干扰； 2. 电调进入电池低压保护状态； 3. 电调进入过温保护状态。	1. 检查接收机出现干扰的原因，检查遥控器电池电量； 2. 红灯持续闪烁为电压保护，请更换电池； 3. 蓝灯持续闪烁为温度保护，请等电调温度降低后继续使用（检查水冷连接是否正常，船模配置是否合理）。
电机抖动，无法启动。	1. 电调和电机连接不良； 2. 电调或电机损坏。	1. 检查各插头及焊接点，必要时重新焊接； 2. 更换电调或电机（注意此时要先用小油门测试，正常后再加大油门，以免再次损坏设备）。
前进正常，但无法后退。	1. 参数项“运行模式”设置错误； 2. 油门行程不匹配； 3. 电调损坏。	1. “运行模式”设置为“双向”； 2. 重新校准油门行程； 3. 联系经销商或厂家。
无法完成油门行程设定。	电调未接收到正确的油门信号。	1. 检查有无接错通道、油门线有无接反； 2. 接收机是否损坏，可以将油门线接到舵机通道进行测试。