

# ORCA®

## Brushed

### 800 series Brushed ESC

#### Instruction Manual Version 1.01

Thank you for choosing ORCA Products. Welcome to join our brushed system convenience of power RC. By purchasing the 800 Series Electronic Speed Control ("ESC") you have choose one of the most advanced speed controls in RC. The 800 series ESC allow to use brushed motor to driver. The ESC attach the LED program card let you easy to change the setup of ESC. Please read this manual thoroughly to familiarize yourself with the installation, setup and operation. By operating this product, you accept the ORCA Warranty Terms.

## SPECIFICATION

System:	Brushed System
Forward/Brake/Reverse:	Yes
Dimensions:	29(L) x 34.8(W) x 10.2mm(H)
Weight:	20g (excluding wires)
Voltage Input:	6V-12.6V (Lipo 2~3Cells)
Peak Current:	400A
Continuous current :	80A
Motor Type:	540 sized brushed motor
B.E.C.:	3A / 6V
Multi Protection System:	Yes
Water proof :	Yes

## OPERATION

\* Used ESC provide XT60 connector to the battery, Red to +ve and Black to -ve.  
(WARNING! Reversing the battery polarity will destroy your ESC and void the warranty.)

\* Connect supplied BEC wire(200mm) to 3pin port match the (- + s) between the CH2/throttle pin of the receiver and ESC.

\* Connect the 2 motor wire(Brushed Motor) to the motor. The connect suggest solder direct to the motor and match the label ESC Yellow +ve and Blue -ve. Avoid soldering each joint for longer than 5 seconds.  
(WARNING! Improper wiring may damage the ESC and void the warranty.)

## RADIO & ESC SETUP

### Transmitter Settings:

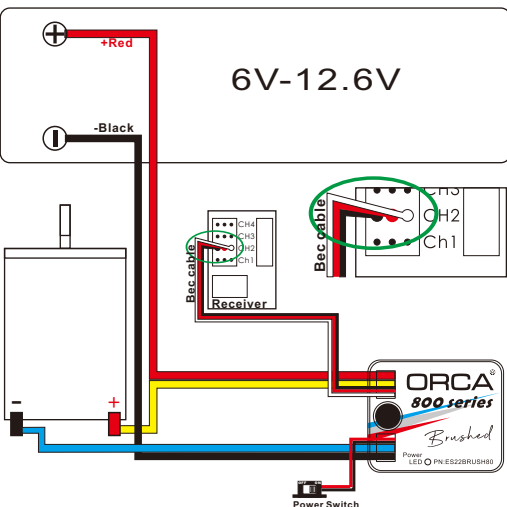
- Throttle Travel Maximum / 100%
- Brake Travel Maximum / 100%
- Throttle Exponential Start with 0%
- Throttle Neutral Trim Center / 0
- Bind your receiver and transmitter first if your radio requires you to do so.

Initial set-up of the throttle end-points of the ESC: (1 or 2)

- 1)Automatically:**  
When you follow the "Operation" to connect the electronic, you can switch on the ESC and then start to run.
- 2)Manually:** (When the manual function is started, the automatic function will permanently canceled.)
  - a) Turn on the transmitter and hold the throttle at full brake position.
  - b) Turn on ESC and listen for 2 beep.
  - c) After you hear the 2 beep, apply full throttle and listen for another 2 beep.
  - d) Once you hear the 2 beep, release the throttle to neutral position.
  - e) A beep will then sound, signifying that the ESC endpoint have been successfully set.

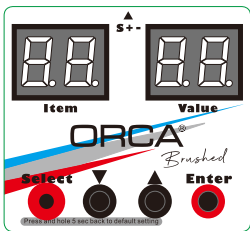
If the car direction is reverse, please check the ESC +ve and -ve are right connect to the motor, is this is right you can change your transmitter throttle direction setup to Reverse your car direction.

## INSTALLATION & CONNECTORS



## Brushed System

**WARNING!**  
Motor +/- polar must match the ESC initial Setup, otherwise the motor rotation will reverse.



## Detailed Explanation of each Function Menu items:

### 1) Running Mode

- Forward/Brake-----This function the car will not have reverse function, Just forward and brake.
- Forward/Rev----- This function the car will reverse immediately when the throttle brake the car.
- Froward/Brk/Rev--- Set this function the first touch of throttle brake the car will have brake function, and if you release to center position after brake and continue brake again the reverse function will appear.

### 2) Battery Type

Lipo, LiFe and Nixx select.

### 3.) Battery Cut-Off Voltage

- |   |  |   |
|---|--|---|
| Lipo --- Low ----- cut off at 2.9V/cell | Li-Fe — Low ----- cut off at 2.2V/cell | Nixx — Low ----- cut off at 4.0V/ total |
| Middle -- cut off at 3.2V/cell          | Middle--- cut off at 2.5V/cell         | Middle } cut off at 4.0V/ total         |
| High ----- cut off at 3.4V/cell         | High ----- cut off at 2.8V/cell        | High } cut off at 4.0V/ total           |
| Disable - No cut off protect            | Disable - No cut off protect           | Disable - No cut off protect            |

### 4) Punch

Allows you to change the punch of the ESC (Level 1 to Level 5). Level 1 has the most miniature punch and Level 5 has the highest punch. Adjust punch level to maximize acceleration speed with minimum wheel spin.

### 5) PWM(Driver Freq)

- Allows you to change the forward drive frequency of the ESC ("1K to 24K From six-step)
- \* The 1K setup will give you good punch at the low end.
- \* The 24K setup will result in strong mid to top end.
- \* Experiment to find out what suits your driving style best.

### 6)Throttle Compress

Basically the effective range of throttle is 0%~100%, when the T.Compress set in 10%, the throttle effective range will change to 0% ~ 90%, it can let the throttle respond more sensitive, specially suitable for most brush motor when you want to make it more strong and sensitive in the bottom power.

### 7) Initial start force

Usually the throttle force starts from 1% to 100%; it can let you get the best linear control feeling. This function let you choose the throttle start point at 3%, 6%, 9%, 12%, 15%, or 18% to get the throttle feeling more aggressive.

### 8) Max Forward Force

Control the maximum output power of ESC, it can control the maximum speed and increase the handling of the car, specially in Crawl racing. Lower speed more control.

### 9) Max Reverse Force

Control the Maximum Reverse power when you Reverse the car.

### 10) Max Brake Force

Control the maximum brake power, it can control the brake feeling more smooth or more aggressive.

### 11) Brake Punch

When you set Punch 6, the brake time will follow your throttle brake simple and direct, if you used Punch 1-5 the brake feeling have something ABS, get more smooth.

### 12) Drag Brake

- Set the automatic brake force applied when the throttle returns to neutral position (8 steps from 0% to 100%):
- \* 60%, 80% and 100% Drag Brake recommend used in Crawl only.

### 13) Initial Brake Froce

Usually the brake force starts from 1% to 100%; it can let you get the best linear control feeling. This function can let you get a more aggressive brake feeling. You can choose the brake force start point at 1%, 5%, 10%, 15%, 20%, 25%, 30% or /35% to 100%.

### 14) Neutral Range

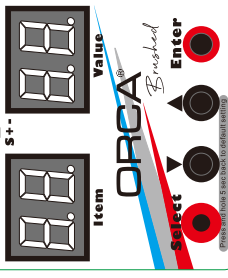
Set the sensitive relay to your throttle feeling, preset in 45us.

# Setting by LED Program Card

Item	Value	Forward/brake/Rev	Forward/Brake	Lipo	Forward/Rev	Forward/Rev	Forward/Rev	Forward/Rev	Forward/Rev	Forward/Rev
Running Mode		Forward/brake/Rev	Forward/Brake	Lipo	Forward/Rev	Forward/Rev	Forward/Rev	Forward/Rev	Forward/Rev	Forward/Rev
Battery Type		Low	Middle	High	Disable					
Cut-Off Voltage		Level1	Level2	Level3	Level4	Level5				
Punch Level		1K	4K	8K	12K	16K	24K			
PWM		0%	10%	15%	20%	25%	30%			
Throttle compress		3%	6%	9%	12%	15%	18%			
Starting Force		1%	3%	6%	9%	12%	15%			
Max Forward Froce		25%	50%	75%	100%					
Max Reverse Force		25%	50%	75%	100%					
Max Brake Force		0%	15%	30%	45%	60%	75%	90%	100%	
Brake Punch		Level1	Level2	Level3	Level4	Level5	Level6			
Drag Brake		0%	5%	10%	20%	40%	60%	80%	100%	
Initial Brake Force		0%	5%	10%	15%	20%	25%	30%	35%	
Neutral Range		15us	30us	45us	60us	75us	90us	105us		

## How to used the LED Program Card to setup the ESC.

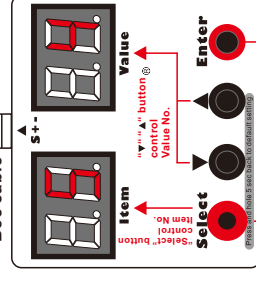
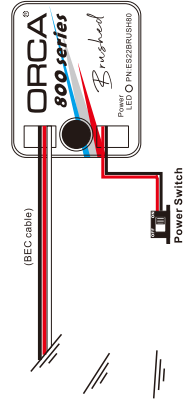
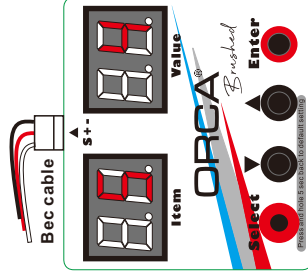
Refer to here



Refer to here

For example: Now set the **Punch to Level4**

- 1) Plug "BEC" cable to the program card.
- 2) Esc connect the battery and then turn it on.
- 3) Press the "Select" button one by one until the "Item" no. up to "5".
- 4) Press the "▲" button one by one until the "Value" no. up to "4".
- 5) Press the "Enter" button and then, the card will show "SE" and "nd", now; all data are ready to send but not successful.
- 6) Press the "Enter" button again, and then the card will show "SU" and "CC", now the programming are successful.
- 7) You must restart the ESC after change the setup, otherwise the ESC will stop to run.



Press and hold 5 sec back to default setting. Double-press the "Enter" button will succeed in your programming.

All ORCA products are manufactured in accordance with the highest quality standards. ORCA guarantees this product to be free from defects in materials or workmanship for 60 days from the original date of purchase verified by sales receipt. This limited warranty does not cover damages resulting from abnormal wear, misuse or improper maintenance of the product.

To avoid unnecessary service and mailing charges, always eliminate all other possibilities and check all components for malfunctions before sending in your unit for repair. Products sent in for repair that operate perfectly will be charge a service fee.

When sending in the product, always pack carefully and include the original sales receipt, a description of the problem encountered, your return address and contact information. Since we do not have control over the installation and use of this product, we cannot accept any liability for any damages resulting from the usage of this product. Therefore, using this product is at your own risk, and the user accepts all resulting liability from installing and using of the product.