FOXWERC®

SWIFTR

User Manual
Brushless Electronic Speed Controller
SwiftR 16BL30
SwiftR 12BL45
SwiftR 10BL60

Thank you for your purchase. The product is highly powerful, and incorrect usage may cause personal injury and equipment damage. Please read the following statement carefully before use, once used, it is considered to be an acceptance of all the contents. Please use the product strictly in accordance with the manual instructions. We shall not be held liable for any damages or losses arising from misuse, unauthorized modification, or improper operation. We reserve the rights to update product design, specifications, and usage requirements without prior notice.

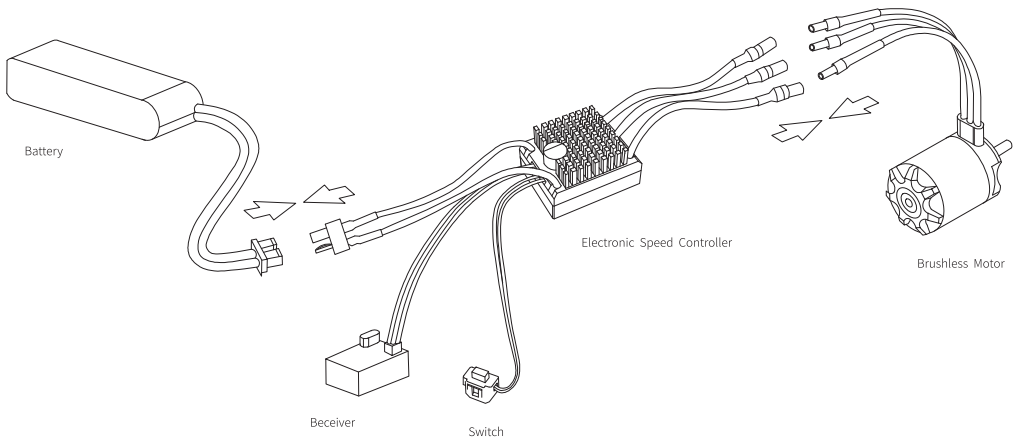
01 Warnings

· Before connecting the ESC to related components, please ensure all connections are properly insulated to avoid damaging the ESC;
· Please ensure all components are properly connected. Poor connections may result in loss of vehicle control, equipment damage, or other unpredictable malfunctions;
· Before using the ESC, please read the manuals for all power components and the chassis to ensure proper power matching. This will help avoid incorrect configurations that could cause motor overload and ESC damage;
· Always disconnect the batteries after use, as the ESC will continue to consume current if it's connected to batteries (even if the ESC is turned off). Long-time contact will cause batteries to completely discharge and result in damage to batteries or ESC. This WILL NOT be covered under warranty.

02 Specifications

Model	SwiftR 16BL30	SwiftR 12BL45	SwiftR 10BL60
Cont. / Peak Current	30A/100A	45A/300A	60A/300A
Motor Type	Sensorless Brushless Motor		
Applications	1/16 & 1/18 Scale RC Car	1/12 & 1/14 Scale RC Car	1/10 Scale RC Car
Recommended Motor	2S<5000KV;3S<3500KV	2S<6000KV;3S<4000KV	2S<6000KV;3S<3500KV
LiPo/NiMH Cells	2-3S LiPo, 6-9 Cells NiMH	2-3S LiPo, 6-9 Cells NiMH	2-3S LiPo, 6-9 Cells NiMH
BEC Output	6V @ 3A	6V @ 3A	6V @ 5A
Size	36.2(L)*28.4(W)*20.3mm(H)	36.2(L)*28.4(W)*20.3mm(H)	47.6(L)*37.4(W)*21.1mm(H)
Weight	39.5g(w/wires&output connectors)	44.2g(w/wires&output connectors)	71.6g (w/wires&output connectors)
Programming Port	Shared with the Throttle Signal Interface		
Auto Alert	Triggers audible alert(continuous beeping) after 10 minutes of inactivity		

03 ESC Connections



WARNING! To protect you and bystanders, remove motor pinion gear prior to system calibration & setup. Power-on the ESC only with wheels suspended off ground.

Refer to the wiring instructions and diagram:
1.Motor Connections:
There is no polarity on the three ESC-to-motor wires (A/B/C), so the initial connection is not critical. You can swap two wires if the motor runs in reverse.
2.Receiver Connections:
Connect the ESC throttle cable to the throttle channel on receiver. Since the red wire in the throttle cable outputs BEC voltage to the receiver and servo, please do not supply additional power to the receiver, otherwise the ESC may be damaged. If additional power is required, disconnect the red wire on the throttle cable from the ESC.
3.Battery Connections:
Please ensure positive (+) of the ESC connects to positive (+) of the battery, and negative (-) connects to negative (-) when wiring. Reverse connection may damage your ESC. This WILL NOT be covered under warranty!

04 ESC Setup

1 Set the Throttle Range

The calibration must be done on the first use of the ESC, or if a new transmitter or receiver is installed, otherwise the ESC may not work correctly. We recommend to set the no signal protection for throttle channel of transmitter (F/S) to "OFF" or set its value to the "Neutral Position" to ensure the motor can be stopped when there is no signal received from the transmitter. The throttle calibration steps are as follows:
Turn on the transmitter, pull the throttle trigger to the full throttle position, then turn on the ESC switch. When you hear one long beep, pull the throttle down to the full brake position quickly, and when two short beeps, leave the throttle trigger to its neutral position.The motor can work normally after the throttle range calibration is complete.

2 Programmable Items

The highlighted options are the default settings of the ESC.

Programmable Items		Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9	Option 10
1	Running Mode	FWD w/ BR	FWD & REV w/ BR	**FWD w/ REV**							
2	Cutoff Voltage	Disabled	2.6V/Cell	2.8V/Cell	3.0V/Cell	**3.2V/Cell**	3.4V/Cell				
3	Punch	1 Level	2 Level	3 Level	4Level	5Level	6Level	7Level	8Level	9Level	**10Level**
4	Drag Brake Force	0%	5%	10%	20%	40%	60%	80%	**100%**		
5	Max. Brake Force	不开启	25%	**50%**	75%	100%					
6	Max. Forward Force	25%	50%	**75%**	100%						
7	Max. Reverse Force	25%	**50%**	75%	100%						
8	Neutral Range	6%	**9%**	12%							
9	Timing	0°	3.75°	7.5°	11.25°	**15°**	18.75°	22.5°	26.25°		
10	Motor Rotation	**CCW（逆时针）**	CW（顺时针）								
11	Sine Wave Power	20%-100%（Programmable）									
12	Sine Wave Range	5%-50%（Programmable）									
13	Sine-wave Low/High speed	100-10000（Programmable）									

1. Running Mode:
Option 1: Forward with Brake
The vehicle only brakes on the first time you push the throttle trigger to the reverse position. When the throttle trigger return to the neutral position and then re-push the trigger to reverse position, the vehicle will reverse. The motor will reverse immediately when the throttle trigger is pushed to reverse position. Upon pushing the throttle trigger forward position while reversing, the vehicle will come to a full stop before moving forward.
Option2: Forward/Reverse with Brake
The vehicle only brakes on the first time you push the throttle trigger to the reverse position. If the motor stops when the throttle trigger return to the neutral position and then re-push the trigger to reverse position, the vehicle will reverse; if the motor does not completely stop, then your vehicle won't reverse but still brake. This method is for preventing vehicle from being accidentally reversed.
Option 3: Forward and Reverse
The motor will reverse immediately when the throttle trigger is pushed to reverse position. This mode is generally used in special vehicles.
2. Cut-Off Voltage:
This function is mainly to prevent excessive discharge of lithium batteries from causing damage. The ESC monitors the battery voltage all the time, and it will immediately cut off the output once the voltage falls below the set threshold. The RED LED will flash a short, single flash that repeats (,) to indicate the low-voltage cutoff protection is activated. Please set the "Cutoff Voltage" to "Disabled" if you are using NiMH batteries.
3. Punch:
Set in 1-10 levels, the higher the set value, the faster the acceleration. Please factor in the site, tire grip characteristics, vehicle configuration,etc. An aggressive setting may cause the tire to slip, and the large accelerated current will have adverse effects on the esc/motor/battery.
4.Drag Brake Force:
Refers to the brake force generated by the motor when the throttle trigger returns to neutral position. Choose the appropriate value according to the type of vehicle, configuration, site, etc.
5.Max. Brake Force:
This ESC provides proportional braking function; the braking effect is decided by the position of the throttle trigger. It sets the percentage of available braking power when full brake is applied. Please select the most suitable value as per your vehicle condition.
6.Max. Forward Force:
Refers to the maximum forward driving torque permissible for output by the electronic control system when the electronic throttle input signal reaches its maximum value.Different values will bring different forward speed. Please select the most suitable value as per your vehicle condition.
7.Max. Reverse Force: Refers to the reversing speed generated by the motor when the throttle trigger returns to the reverse position. Different values will bring different reversing speed. It is recommended to use a smaller reversing speed to avoid errors caused by reversing too quickly.
8.Neutral Range: It is used to adjust the neutral range to accommodate different transmitters and players' preferences. If the throttle neutral position tends to drift, pleasefine-tune the throttle knob or increase the neutral dead zone (e.g., from 9% to 12%).
9.Timing: It has three functions.
1) The maximum rpm of the motor can be fine-tuned, the higher the timing, the higher the maximum rpm, and the greater the current;
2) Compatible with different motors. Some motors may work abnormally under the default timing, and need to be adjusted to a suitable timing to work properly;
3) By adjusting the timing, the motor can work at the optimal efficiency point.
10. Motor Rotation:
This setting determines the motor rotation when a forward throttle signal is received. CCW indicates reverse direction relative to the motor's default rotation, while CW (Clockwise) indicates consistent direction with the motor's default rotation.

3 Programming Method

1）Parameter Setup
1. Insert the throttle signal wire into the parameter adjustment module, connect the module to the computer via USB, and use the parameter adjustment software for parameter configuration.
2. Insert the throttle signal wire directly into the programming card to configure the parameters.
3. Insert the throttle signal wire into the Bluetooth module to configure the parameters.
2）Factory Reset
Use the Bluetooth parameter adjustment software to operate.

05 Explanation for LED Status

1.The RED LED stays on constantly when powered on.
2.The RED LED turns off when the throttle trigger is in the neutral point, and remains steadily on when it is not.
3.RED LED double flash: Low-voltage protection.
4.RED LED triple flash: Over-heat protection.

06 Trouble Shooting

Troubles	Possible Causes	Solutions
The LED stays off when powered on and the motor cannot be started.	1. No battery voltage input to the ESC; 2. The switch is damaged.	1. Check the battery condition and ensure the connection between the battery and the ESC is good and whether the connector is soldered well; 2. Replace the damaged switch.
The vehicle reverses when the forward throttle is applied.	The motor rotation is inconsistent with the forward direction of the chassis.	Swap any two of the three phase wires of motor A, B and C
The motor suddenly stalls or experiences a sharp decrease in output power while running.	1. Receiver interference; 2. Low-voltage protection activated; 3. Thermal protection activated.	1. Check for all possible causes of interference to the receiver and verify the transmitter's battery level; 2. Replace the battery if the RED LED flashes twice; 3. Three consecutive RED LED flashes indicate thermal protection. Allow the ESC or motor to cool down before resuming operation. It's recommended to reduce the vehicle's load.
The motor is cogging and unable to start.	1. Poor ESC-motor connection; 2. ESC or motor failure.	1. Inspect all connectors and solder joints; re-solder them if necessary; 2. Replace the ESC or motor. Be sure to perform a low-throttle test first to prevent recurrent damage.
Normal forward operation, but not reverse.	1. The throttle channel's neutral point is offset the brake range; 2. The "Running Mode" parameter is set incorrectly; 3. ESC failure.	1. Recalibrate the throttle travel. Ensure the ESC LED remains off when the throttle trigger is at the neutral position; 2. Set the "Running Mode" parameter to " "Forward/Reverse with Brake"; 3. Contact the distributor or manufacturer.
Unable to connect to programming module.	No valid throttle signal received by the ESC.	Please refer to the manual to check the connection.
Unable to complete throttle travel setup.	The module is connected incorrectly to the ESC.	1. Check for incorrect wiring to the receiver channel or reverse throttle cable polarity; 2. To test for a damaged receiver, connect the throttle cable to a servo channel for testing.

Shenzhen Likno Power Technology Co., Ltd
8/F, Building A, Chuangxing Times, Bantian Sub-district, Longgang District, Shenzhen City, Guangdong Province, P.R.China