

Introduction

Congratulations and thanks for purchasing Hobbywing QUICRUN series electronic speed controller (ESC) for brushed motor. The power system for RC model can be very dangerous, so please read this manual carefully. Since we have no control over the installation, application, use or maintenance of this product, in no case shall we be liable for any damages, losses or costs.

Features

- ★ Water-proof and dust-proof, suitable for all-weather condition races.
- ★ Small size with built-in capacitor module.
- ★ Three running modes: Fwd/Br, Fwd/Rev/Br and Fwd/Rev, fits for various vehicles *.
- * **Note 1:** Fwd =Forward, Br=Brake, Rev=Reverse.
- * **Note 2:** QUICRUN-WP-1625-BRUSHED ESC only has the Fwd/Rev/Br mode.
- ★ Great current endurance capability.
- ★ Great built-in BEC output capacity.
- ★ Automatic throttle range calibration, easy to use.
- ★ Easy to set the ESC parameters with jumpers.
- ★ Multiple protections: Low voltage cut-off protection for battery / Over-heat protection / Throttle signal loss protection.

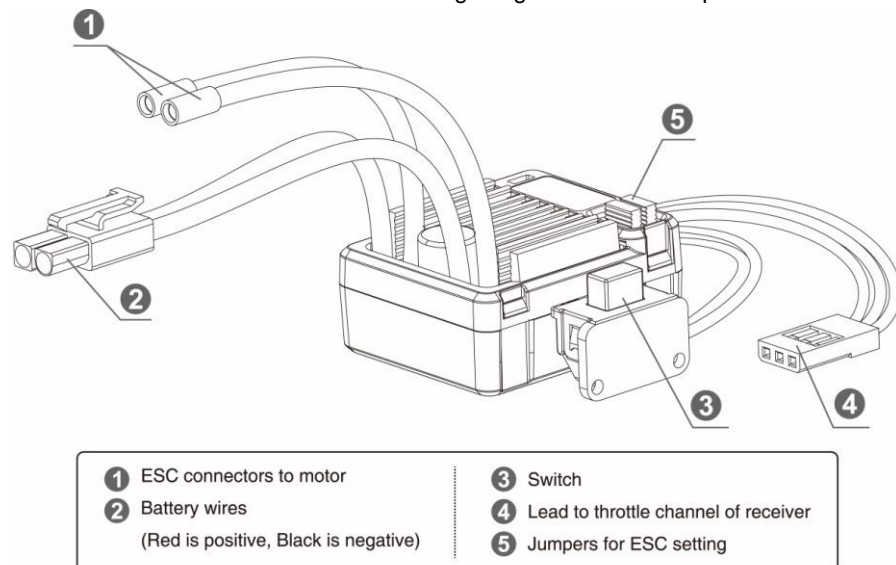
Specifications

| Model | | WP-1625-BRUSHED | WP-1060-BRUSHED | WP-860-DUAL-BRUSHED |
|---------------------------|--------------------|---|--|---|
| Fwd. Cont. / Peak Current | | 25A /100A | 60A / 360A | 60A /360A |
| Rev. Cont. / Peak Current | | 25A /100A | 30A /180A | 30A /180A |
| Voltage Range | | 2-3S Lipo or 5-9 NiMH | | 2-4S Lipo or 5-12 NiMH |
| Cars Applicable | | 1/18 &1/16: Touring Car, Buggy, Monster, Truggy | 1/10: Touring Car, Buggy, Short Course Truck, Monster, Truggy, Rock Crawler and Tank | 1/8: Touring Car, Buggy, Short Course Truck, Monster, Truggy, Rock Crawler and Tank |
| Motor Limit * | 2S Lipo or 6 NiMH | 280、370 or 380 Size Motor RPM<30000 @7.2V | 540 or 550 Size Motor: ≥12T Or RPM<30000 @7.2V | 540, 550, 775 Size Motor: ≥12T Or RPM<30000 @7.2V |
| | 3S Lipo or 9 NiMH | 280、370 or 380 Size Motor RPM<20000 @7.2V | 540 or 550 Size Motor: ≥18T Or RPM< 20000 @7.2V | 540, 550, 775 Size Motor: ≥18T Or RPM<20000 @7.2V |
| | 4S Lipo or 12 NiMH | Not Available | | 540, 550, 775 Size Motor: ≥24T Or RPM<15000 @7.2V |
| Resistance | | Fwd 0.003Ω, Rev 0.003Ω | Fwd 0.001Ω, Rev 0.002Ω | Fwd 0.001Ω, Rev 0.002Ω |
| BEC Output | | 1A/5V (Linear Mode) | 2A/5V (Linear Mode) | 3A/5V (Switch Mode) |
| PWM Frequency | | 1KHz | | |
| Dimension / Weight | | 34*24*14 / 23.5g | 36.5*32*18 / 39g | 46.5*34*28.5 / Not Available |
| Cooling Fan | | Without cooling fan | | Cooling fan works with 2-3S Lipo |
| Running Modes | | Forward/Reverse/Brake | Forward/Reverse/Brake, Forward/Brake, Forward/Reverse | |

***Note 3:** WP-860-DUAL-BRUSHED has two outputs to drive 2 motors. When driving 2 motors simultaneously, the Turns of the motors need to be increased.

Begin to Use the New Brushed ESC

Step 1: Turn off the ESC switch, wire the battery, motor, ESC, servo, receiver according to the following diagram. Recheck the wiring to ensure all connections are correct before getting into the next step.



Attention:

- 1) Once the power is wrongly connected (that means the battery polarity is mistakenly reversed), irreparable damage may occur to the ESC and batteries. Therefore, please pay close attention to the battery polarity.
- 2) Please swap the two wire connections if the motor rotate in the opposite direction.

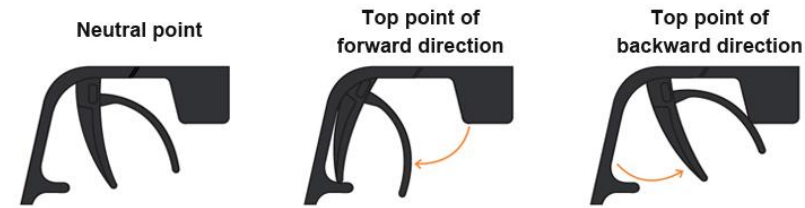
Step 2: Turn on the transmitter, and set parameters (of the throttle channel) like "D/R", "EPA", "ATL" to 100% (if there is no LCD display on the transmitter, please adjust the corresponding knob to its limit). Set the throttle trim to 0 (if there is no display, then adjust the knob to the neutral position). For FUTABA™ and similar transmitters, set the throttle direction to "REV", while the throttle direction of others to "NOR". Please disable the built-in ABS brake function in your transmitter.

Besides, we strongly recommend users to enable the "FailSafe (F/S)" function of the transmitter, set the "F/S" of the throttle channel to the Shutdown mode or set the protection value to the neutral position, so the car can be stopped if the receiver fails to get the radio signals from the transmitter.

Step 3: Calibrate the throttle range. Turn on the ESC switch, set the throttle stick to the neutral point and then wait 3 seconds for the completion of throttle range self-calibration; Beep sound emits if the self-calibration is successfully passed, then the ESC is ready to run.

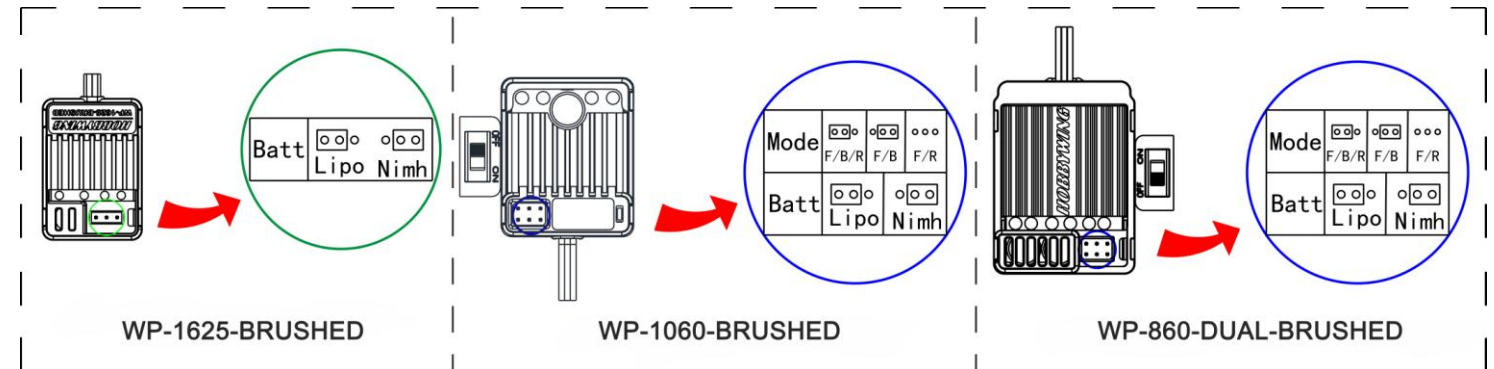
| The Meaning of Beep Sound | LED Status (in Running) |
|--|--|
| <ul style="list-style-type: none"> ● 1 short Beep: The battery is NiMH ● 2 short Beeps: The battery is 2S Lipo ● 3 short Beeps: The battery is 3S Lipo ● 4 short Beeps: The battery is 4S Lipo ● 1 long Beep: Self-test and throttle range calibration is OK, the ESC is ready to run | <ul style="list-style-type: none"> ● When the throttle stick is in neutral range, red LED is off ● Partial throttle forward, partial brake or partial throttle reverse, red LED blinks ● Full throttle forward, maximum brake or full throttle reverse, red LED is solid on |

Throttle Stick Position



Set the ESC Parameters

The running mode and battery type can be set with jumpers.



1. **Running Mode:** 3 Options (Fwd/Br/Rev, Fwd/Br, Fwd/Rev). The "Fwd/Br/Rev" is the default option. Fwd=Forward, Br=Brake, Rev=Reverse

"Fwd/Br/Rev" mode indicates the vehicle can go forward, backward and brake. This mode uses "Double-click" method to make the vehicle reverse. When moving the throttle stick from the neutral zone to backward zone for the 1st time, the ESC begins to brake the motor and the motor slows down but still running, so the backward action is NOT performed immediately. When the throttle stick is moved to the backward zone again, if the motor speed slows down to zero (i.e. stopped), the backward action will happen. This "Double-click" method prevents mistakenly reversing action when the brake function is frequently used in steering. Therefore, this mode is often used in daily practice. For the "Fwd/Br" mode, the vehicle can go forward and brake, but no reversing, so this mode is often used in competitions. And the "Fwd/Rev" mode uses "Single-click" method to make the vehicle reverse, when moving the throttle stick from neutral zone to backward zone, the vehicle reverses immediately, so this mode is usually used for rock crawler.

(Note: WP-1625-BRUSHED has no optional running mode except the default "Fwd/Br/Rev" mod)

2. **Battery Type:** 2 Options (Lipo, NiMH), the "Lipo" is the default option.

Protection Features

1. **Low Voltage Cutoff Protection:** If the voltage of battery pack is lower than the threshold for 2 seconds, the ESC will enter the protection mode, so the motor speed will be lowered till stopped. When the car stops, the red LED blinks to indicate the low voltage cut-off protection has been activated.

| 2S Lipo | 3S Lipo | 4S Lipo | 5-9 NiMH |
|--|---|--|--|
| When the voltage is below 6.5V, the output power will be halved. When the voltage is lower than 6.0V, the output will be cut off and won't be resumed again. | When the voltage is below 9.75V, the output power will be halved. When the voltage is lower than 9.0V, the output will be cut off and won't be resumed again. | When the voltage is below 13.0V, the output power will be halved. When the voltage is lower than 12.0V, the output will be cut off and won't be resumed again. | When the voltage is below 4.5V, the output power will be halved. When the voltage is lower than 4.0V, the output will be cut off and won't be resumed again. |

2. **Over-heat Protection:** When the internal temperature of the ESC is higher than 100 Celsius degrees, this protection will be activated and the output power will be reduced till cut off. The RED LED blinks when the vehicle stops, and the ESC will not resume output power until its temperature is below 80 Celsius degrees.

3. **Throttle signal loss protection:** The ESC will cut off the output power if the throttle signal has been lost for 0.1 second. The "Fail Save" function of the radio system is strongly recommended to be activated.

Troubleshooting

| Troubles | Possible Causes | Solutions |
|---|--|--|
| After power on, no LED lights up, no self-test and no beep sound. | <ol style="list-style-type: none"> No power is drawn to the ESC. The switch of the ESC is broken. | <ol style="list-style-type: none"> Check the connections between battery and ESC. Re-solder the connectors if needed. Change the ESC switch. |
| After turn on, the RED LED blinks but the motor doesn't work. | <ol style="list-style-type: none"> Throttle wire is wrongly plugged or into the incorrect channel. The ESC can't successfully complete the throttle range self-calibration. | <ol style="list-style-type: none"> Plug the throttle signal wire correctly (in right direction) into the throttle channel (usually Ch2) of the receiver. Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position. |
| The car runs backwards when accelerating forward on the transmitter. | <ol style="list-style-type: none"> The direction setting of the throttle channel is incorrect in the transmitter or the motor wires are wrongly connected. | <ol style="list-style-type: none"> Reverse the direction of the throttle channel, from the original "NOR" to "REV" or "REV" to "NOR". Swap any two wires between the ESC and motor. |
| The vehicle can't reach to the full speed even at the full throttle, and the RED LED doesn't keep lighting. | <ol style="list-style-type: none"> There are some incorrect settings in the transmitter. | <ol style="list-style-type: none"> Set D/R, EPA, ATL to 100% for the throttle channel or turn the knobs to maximum value. Set TRIM to 0 or turn the knob to its neutral position. |
| Vehicle can't reverse. | <ol style="list-style-type: none"> The corresponding jumper is plugged into the wrong position. Neutral point of the throttle is drifted or deviated. | <ol style="list-style-type: none"> Insert the jumper into the right location. Set the "TRIM" of the throttle channel to 0 or turn the knob to its neutral point. |
| Motor suddenly stops running. | <ol style="list-style-type: none"> The throttle signal is lost. The low voltage cutoff protection or thermal protection (i.e. over heat protection) of the ESC is activated. | <ol style="list-style-type: none"> Check the connections between ESC and receiver. Check the transmitter and receiver). Check whether the battery voltage of the transmitter is too low. The RED LED on the ESC blinks, denoting the ESC is under low voltage cutoff protection or over-heat protection. Please check the ESC temperature, if it is too hot, please let the ESC cool down. If the battery voltage is low, please change the battery. |
| The Vehicle neither go forward no reverse, but the LED indicators work normally. | <ol style="list-style-type: none"> The connection between ESC and motor is interrupted. The motor is damaged. | <ol style="list-style-type: none"> Check the connectors between the motor and ESC to ensure all connections are firm and reliable. Replace a new motor. |
| The motor accelerates rapidly at the startup moment, but has lockout or cogging problem. | <ol style="list-style-type: none"> The discharge capacity of the battery is not strong enough. The motor rotates too fast, and the gear ratio is too aggressive. Something wrong with the driveline of the vehicle. | <ol style="list-style-type: none"> Change a battery with better discharge capability. Use a motor with lower RPM, or smaller pinion to soften the gear ratio. Check the driveline of the vehicle. |



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