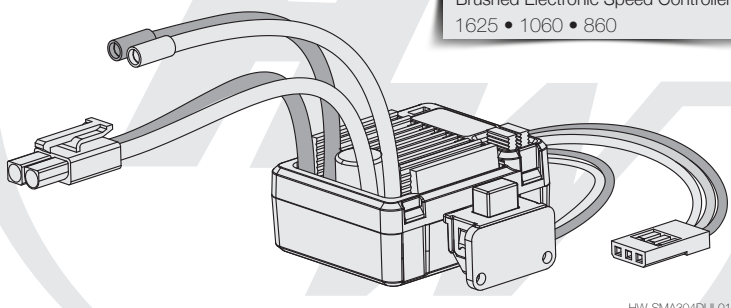


USER MANUAL

QUICRUN

Brushed Electronic Speed Controller
1625 • 1060 • 860



HW-SMA304DUL01



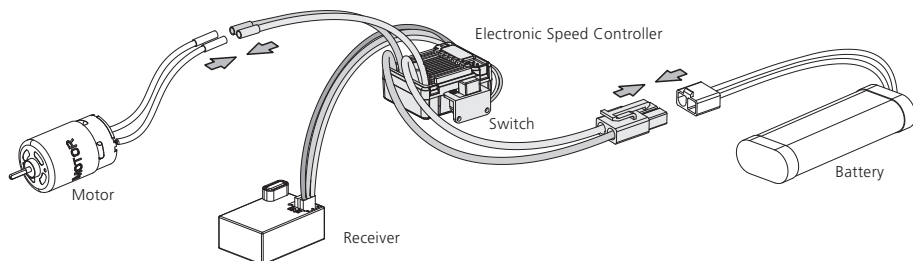
Congratulations and thanks for purchasing Hobbywing QUICRUN series electronic speed controller (ESC) for brushed motor. The power system for RC model can be very dangerous, so please read this manual carefully. Since we have no control over the installation, application, use or maintenance of this product,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

01 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.
- 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.

02 Begin to Use the New Brushed ESC

1 Connections



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.



- 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 motor wire connections if the motor rotate in the opposite direction.

Specifications

Model	QuicRun-WP-1625-BRUSHED	QuicRun-WP-1060-BRUSHED	QuicRun-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
	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
	4S Lipo or 12 NiMH	Not Available	550, 775 Size Motor: ≥24T or RPM<15000 @7.2V
BEC Output	1A / 6V (Linear Mode)	3A / 6V (Switch Mode)	3A / 5V (Switch Mode)
Dimension / Weight	34x24x14mm / 23.5g	36.5x32x18mm / 39 g	46x36x26.3mm / 73g
Cooling Fan		Without cooling fan	With cooling fan. It is supplied from receiver.
Running Modes	Forward / Reverse / Brake	Forward / Reverse / Brake, Forward / Brake, Forward / Reverse	Forward / Reverse / Brake, Forward / Brake, Forward / Reverse, Boat

*Note: 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.

2 Detecting the Throttle Range

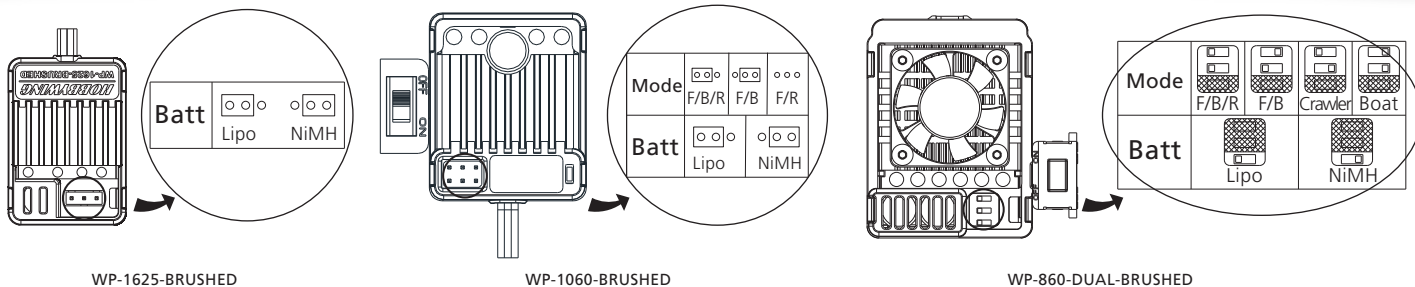
Turn on the transmitter, and set parameters (of the throttle channel) like "D/R", "EPA", "ATL" to 100% (if there is no LCD display on the transmitter, please adjust the corresponding knob to its limit). Set the throttle trim to 0 (if there is no display, then adjust the knob to the neutral position). 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 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.

Detecting the throttle range: Place the throttle trigger in the neutral position first, then turn on the ESC and wait for 3 seconds, the esc will complete the throttle detection. Please refer to the chart on the right for the beeping phenomenon after startup.

The Meaning of Beep Sound	LED Status (in Running)	Throttle Trigger Position
<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 reverse, red LED blinks • Full throttle forward, maximum brake or full throttle reverse, red LED is solid on 	

03 ESC Setup



How to Set Parameters:

1. QUICRUN-WP-1625 / 1060-BRUSHED ESC uses the jumper cap to set running mode & battery type.

(Note: The "running mode" is not programmable for the QUICRUN-WP-1625-BRUSHED ESC.)

For example, if want set the battery type to the "Lipo" mode, you only need to plug the jumper cap into left two pins of the "Batt" pin header; if want set the running mode to the "F/R" mode, you need to remove the jumper and do not plug it into any pins of the "Mode" pin header.

2. QUICRUN-WP-860-DUAL-BRUSHED ESC uses the dial switch to set running mode & battery type, you can use a screwdriver or tweezers to change the position of the dial switch.

For example, if want to set the battery type to the "NiMH" mode, you only need to push the dial switch "Batt" (the dial switch marked as number 1) to the right position; if you want to set the running mode to F/B/R, you can push both dial switch 2 and dial switch 3 to the left position simultaneously.

Programmable Items:

1. Running Mode

"F/B/R"=Forward/Brake/Reverse, which means forward and reverse with brake. This mode uses "Double-click" method to make the vehicle reverse, the vehicle only brakes on the first time you push the throttle trigger to the reverse/brake zone, if the motor stops when the throttle trigger return to the neutral position and then re-push the trigger to reverse zone, 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. In this mode, the maximum forward force is 100%, the maximum reverse force is 50%, and the maximum brake force is 100%.

"F/B"=Forward/Brake, which means forward with brake. The vehicle can only move forward and has brake function. This is also commonly acceptable at races. In this mode, the maximum forward force is 100% and the maximum brake force is 100%.

"F/R"=Forward/Reverse, which means forward and reverse directly. When the throttle trigger is pushed to reverse zone, the motor reverses immediately. This mode is generally used for special vehicles such as crawler, so it's often called a crawler mode. In this mode, the maximum forward force is 100%, the maximum reverse force is 100%, and the drag brake force is 100%.

"Crawler", same to the F/R mode mentioned above.

"Boat", which also uses forward/reverse running mode. In this mode, the maximum forward force is 100%, but the maximum reverse force is 25%, and there are no brakes.

Note: For QUICRUN WP 1625/1060 BRUSHED escs, the default running mode is F/B/R; For QUICRUN WP 860 DUAL BRUSHED esc, the default running mode is Crawler.

2. Battery Type

There are two options: "Lipo" and "NiMH". Different battery types will result in different low voltage protection values for esc. Please set them correctly according to the actual use of the battery.

Note: For QUICRUN WP 1625/1060 BRUSHED escs, the default battery type is NiMH. For QUICRUN WP 860 DUAL BRUSHED esc, the default battery type is Lipo.

04 Protection Features

1. Low Voltage Cutoff Protection: In lipo mode, when the battery voltage is below 3.25V/Cell for 2 seconds (if using 2S, the total battery voltage is 3.25*2=6.5V, and if using 3S, it is 3.25*3=9.75V), the esc will reduce the output power; When the battery voltage is below 3.0V/Cell, the esc will turn off the output power. In nimh mode, when the battery voltage is below 4.5V (total battery voltage) for 2 seconds, the esc will reduce the output power; When the battery voltage is below 4.0V, the esc will turn off the output power. After triggering the low voltage protection, the red light continuously flashes when the throttle is at the neutral position.

*Note: For Crawler mode (F/R) and boat mode, when the battery voltage is below the protection value (3.25V/Cell in Lipo mode and 4.5V in nimh mode) for 2 seconds, the esc will directly turn off the output. After the throttle trigger returns to the neutral position, it can resume operation for 2 seconds, and then turn off the output, and so on.

2. Overheat protection: When the internal temperature of the esc is higher than 105C, the output power will be reduced, and the red light will continue to flash. When the temperature is below 65C, the full power output can be automatically restored.

3. Throttle signal loss protection: When the esc fails to detect the throttle signal for 0.1 seconds continuously, the output will be turned off, and normal operation will resume immediately after the signal is restored. It is recommended to set the fail safe protection "F/S" of the transmitter to turn off the output mode or set the protection value to the neutral position.

05 Troubleshooting

Troubles	Possible Causes	Solutions
After power on, no LED lights up, no self-test and no beep sound.	No power is drawn to the ESC; The switch of the ESC is broken.	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.	Throttle wire is wrongly plugged or into the incorrect channel; The ESC can't successfully complete the throttle range self-calibration.	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.	The direction setting of the throttle channel is incorrect in the transmitter or the motor wires are wrongly connected.	Reverse the direction of the throttle channel, from the original "NOR" to "REV" or "REV" to "NOR"; Swap the 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.	There are some incorrect settings in the transmitter.	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.	The corresponding jumper is plugged into the wrong position; Neutral point of the throttle is drifted or deviated.	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.	The throttle signal is lost; The low voltage cutoff protection or thermal protection (i.e. over heat protection) of the ESC is activated.	Check the connections between ESC 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.	The connection between ESC and motor is interrupted; The motor is damaged.	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.	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.	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.