ESC/Rx- Full Instruction Manual (Covers Part #804-0005)

Congratulations and thank you for your purchasing this product. Improper usage and unauthorized modifications to our product is extremely dangerous and may damage the product and related devices. Please take your time and read the following instructions carefully before you start using your ESC/Rx unit. We have the right to modify our product design, appearance, features and usage requirements without notification

01 - WARNINGS

- ▲ Ensure all wires and connections are well insulated before connecting the ESC/Rx to related devices, as short circuit will damage your ESC.
- ▲ Ensure all devices are well connected to prevent poor connection that may cause your vehicle to lose control or other unpredictable issues such as damage to the device.
- A Read through the manuals of all power devices and chassis and ensure the power configuration is rational before using this unit.
- Stop using the ESC when its temperature exceeds 90°C/194°F, otherwise your ESC/Rx will be damaged and may also damage your motor. We always recommend setting the "Over-Heat Warning" to "Enabled" to ensure damage does not occur to your ESC/Rx unit.
- 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 conection will cause batteries to completely discharge and result in damage to batteries and/or ESC. This WILL NOT be covered under warranty.

02 - FEATURES

- ESC is compatible with sensorless brushless motors.

- Proportional brake with 4 levels of maximum brake force and 4 levels of initial brake force and 8 levels drag brake force.
- 9 levels of acceleration/punch from soft to aggressive for different vehicles, tires and tracks.
 Multiple protections: low-voltage cutoff protection, thermal protection, overload protection, and fail safe (throttle signal loss protection)
- Single-button ESC programming and factory reset.

03 - SPECIFICATIONS										
Model #	804-0005	Lipo/NiMH Battery	2S Lipo / 4-6 Cells NiMH							
Constant/Burst	6A/20A	BEC Output	5A/1A (Switch Mode BEC)							
Motor Type	Sensorless Brushless Motor	Size/Weight	~30mm x 27mm x 15mm / ~12g							
Application	1/18th Midget	Programming Port	Set Button							
Motor Limit	2 Cell Lipo : KV<10000 (Max 130 Size Motor)									

04 - CONNECTIONS AND COMPONENTS

This is an extremely powerful brushless motor system. For your safety and the safety of those around you, we strongly recommend keeping wheels in the air when you turn on the ESC/Rx Unit.

1. Battery Wiring

Proper polarity is essential here! Make absolutely sure positive (+) of ESC(RED WIRE) connects to positive (+) of Battery, and negative (-) of ESC(BLACK WIRE) connects to negative (-) of Battery when you plug in your battery! If reverse polarity is applied to your ESC from the battery, it will damage your ESC. This will not be covered under warranty

2. ESC/Rx Switch 3. Motor Wiring

There is no polarity on the A/B/C wires between ESC and Motor, so do not worry about how you connect them initially. You may find it necessary to swap two wires if the motor runs in reverse.

4. Servo Port 5 Bind Port

There is no polarity to the Bind Plug when inserting it onto the bind port. When installing the bind plug, ensure it is installed all the way onto the bind plug port to ensure proper connection, failure to do so can result is failure to bind.

05 - BINDING, ESC SET-UP AND ADVANCED TUNING FEATURES

Binding Process

- 1. Ensure battery is installed and connected to model and secured in battery tray area. Ensure battery is connected correctly or damage can occur to ESC/Rx unit.
- 2. Remove hood on model so you have full access to ESC/Rx unit.
- 3. Ensure car is elevated off ground so tires are not touching ground, this will prevent any damage if car starts to move during binding process.
- 4. Turn on transmitter.
- 5. Turn on model using the switch just behind the front axle from underside of model.
- 6. Plug in Bind Plug to bind port as shown in image to the right. Plug can be installed in either direction, there is no polarity to the bind plug.
- 7. The Rx Blue light will start to flash after bind plug is installed.
- 8. Watch for blue light to stop flashing and go solid blue.
- 9. After blue light stays solid (no flashing), blue light will then again start to flash, when it does remove bind plug.
- 10. Blue light will flash briefly after plug is removed and then blue light will go solid, this means the Tx and Rx are now bound and model is ready to use.
- 11. Ensure steering and throttle works correct, make adjustment to transmitter to ensure steering is moving correct direction and is straight and car does not move when trigger is in neutral position.
- 12. If steering and throttle do not work, go back to step 1 and repeat steps 1-11.

05 - BINDING, ESC SET-UP AND ADVANCED TUNING FEATURES - CONT

ESC SET-UP

- 1. Ensure battery is installed and Ensure battery is installed and connected to model and secured in battery tray area. Ensure battery is connected correctly or damage can occur to ESC/Rx unit.
- 2. Remove hood on model so you have full access to ESC/Rx unit.
- 3. Ensure car is elevated off ground so tires are not touching ground, this will prevent any damage if car starts to move during binding process.
- 4. On transmitter, make sure the throttle trim knob is turned clockwise until it stops and ensure steering trim knob is center in its rotation, then turn on transmitter.
- 5. Hold ESC Set Button down while you turn on the model using the switch just behind the front axle from underside of model
- 6. When ESC Red Light starts to flash, release the Set Button, ESC is now in setup mode.
- With trigger on radio in neutral position, press Set Button one(1) time, ESC Red Light will stop flashing, this confirms the neutral position.
- Now pull trigger to full throttle on transmitter and press Set Button again, ESC Green Light will flash twice to confirm full throttle setting, hold trigger in full throttle until light stops flashing.
- Now push trigger to full brake on transmitter and press Set Button again, ESC Green Light will flash three time to confirm full brake setting, hold trigger in full brake until light stops flashing.
- 10. Return trigger on transmitter to neutral and ESC Green Light will brink one time. Your
- 12. Ensure ESC it reaching full throttle, pull trigger to full throttle and ESC Green Light should go solid if full throttle is reached.
- 13. If steering and throttle do not work correct, go back to step 1 and repeat steps 1-12.

ADVANCED TUNING FEATURES

Program the ESC with the Set Button on the ESC. See below for setting options.

PROGRAMABLE ITEMS ON ESC												
Basic Setting	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9			
1. Running Mode	FWD/ Delay BRK	FWD/ BRK **	FWD/ Direct BRK									
2. Drag Brake Force	0% **	5%	10%	20%	40%	60%	80%	100%				
3.Low Voltage Cut-Off	Disabled **	2.6V/Cell	2.8V/Cell	3.0V/Cell	3.2V/Cell	3.4V/Cell						
4. Start Mode (Punch)	Level 1	Level 2	Level 3	Level 4**	Level 5	Level 6	Level 7	Level 8	Level 9			
5. Max Brake Force	25%	50%**	75%	100%								
6. Max Reverse Force	25% **	50%	75%	100%								
7. Initial Brake Force	- Drag Brk Force	0%**	20%	40%								
8. Neutral Range	6%	9% **	12%									
9. Timing	0.00°	3.75°	7.50°	11.25°	15.00°**	18.75°	22.50°	26.25°				
10. Over-Heat Warning	Enable **	Disable										

** - This indicates factory setting in ESC.



FACTORY RESET

Restore the default values with the SET Button. Press and hold the SET Button for over 3 seconds anytime when the throttle trigger is at the neutral position (except during the ESC calibration and programming) can factory reset your ESC. RED & GREEN LEDs flash simultaneously indicating you have successfully restored all the default values within your ESC. Once you power the ESC off, and then back on, your settings will be back in the default mode.



06 - RED LIGHT STATUS

 During the Starting-up Process
 The RED LED keeps flashing rapidly indicating the ESC doesn't detect correct throttle signal/nuetral value stored in ESC that match radio settings. Rotate Throttle Trim knob on radio until light stops flashing.

2. In Operation

- RED & GREEN LEDs die out when the throttle trigger is in throttle neutral zone.
- The RED LED turns on solid when your vehicle starts to run forward. The GREEN LED will also come on when pulling the throttle trigger to the full (100%) throttle.
- The RED LED turns on solid when you brake the vehicle.
- The RED LED turns on solid when you reverse your vehicle.

3. When Some Protection is Activated

- The RED LED flashes a short, single flashes that repeats 3 times indicating the low voltage cutoff protection is activated.
- The GREEN LED flashes a short, single flashes that repeats 3 times indicating the ESC thermal/overheat protection is activated.

07 - PROTECTION FUNCTIONS 1. Cutoff Voltage

The ESC monitors the battery voltage all the time, it will immediately reduce the power to 50% and cut off the output 8 seconds later when the voltage goes below the cutoff threshold. The RED LED will flash a short, single flash that repeats (*, *, *) to indicate the low-voltage cutoff protection is activated. Please replace the battery or charge the battery immediately.

2. ESC Thermal Protection

The ESC will automatically cut off the output with the RED LED flashes (*, *, *) when the temperature gets up to the value you've previously preset and activates the ESC Thermal Protection. The output will not resume until the temperature goes down.

3.Signal loss protection

The ESC will automatically cut off the output with the RED LED flashes fast when the throttle signal loss 0.1 second later.

