

# TorqueMaster BR-XL

by Holmes Hobbies

80 amp Brushed Speed Control for RC Trucks and Robots

*www.Holmeshobbies.com*  
*The source for Power*



**Thank you for purchasing the most advanced Brushed ESC specifically designed for the rigors of fine control robotics and crawling! We hope you enjoy your new product, so please take the time to read through the instructions to get the most from your TorqueMaster ESC.**

## 1.0 Features

- Castle Creations Castle Link© compatible
  - 2s to 6s lipo input
  - onboard 6v 5a switchmode BEC
  - 46x34x20mm
  - 38 grams (with battery wires)
  - Brushed only, no 540 motor limit
  - 80a continuous
- Computer programmable features (1.09 firmware)
- Voltage cutoff
  - Drag brake
  - Holmes Hold
  - Quiet Mode
  - Throttle and Brake curves
  - Throttle Up and Down Damping
  - Punch control
  - Brake strength
  - Reverse amount
  - Arm time
  - High power forward only mode
  - Reverse with lockout mode
  - Instant reverse mode

## 2.0 Connection

Tools and Parts required:  
Wire cutters  
Wire strippers  
Soldering iron (40W)  
Rosin core electrical solder  
Battery connector

### 2.1 Adding a battery connector

The battery connector must be added to the power side of the controller. The red wire is positive (+) and black wire is negative(-). The polarity **MUST BE CORRECT** or the controller will be damaged. Strip enough insulation off of the battery wires to solder on your battery connector to the controller leads. After the connector is soldered and insulated check one more time to make sure the polarity is correct before plugging in a battery.

### 2.2 Plugging in a motor

With a BRUSHED motor, simply solder 4mm bullet plugs onto the motor wires, then insulate. After calibration- if the motor runs backwards while the ESC light is green, swap any two motor wires to reverse the direction of the motor.

### 2.3 Connecting to the receiver

Connect the receiver lead to the throttle channel on your receiver. Do not connect a battery or external BEC to the receiver unless the red wire is removed from the ESC's receiver lead. Be sure to insert plug with correct polarity.

## 3.0 Calibration

The ESC uses a combination of sounds and LED flashes to tell you where you are in the calibration sequence. The ESC generates sounds through the motor, so when calibrating your ESC to a transmitter it is best to have a motor plugged in.

### 3.1 Calibrating the ESC to YOUR transmitter

**Note:** When running two ESCs, they **CANNOT** have the battery power wires connected during calibration or programming. It will cause problems with the second ESC.

- 1) Remove pinion from motor to prevent accidents
- 2) Plug in battery
- 3) Hold full throttle on transmitter before ESC arms
- 4) ESC will beep and begin flashing red rapidly to indicate storage of full forward throttle position
- 5) Hold full reverse on transmitter until beeping changes
- 6) ESC will beep rapidly with no lights to indicate storage of full reverse throttle position
- 7) Position throttle in neutral position, adjust throttle trim until all lights go out
- 8) After about two seconds, ESC will store neutral position
- 9) Once calibration is complete, ESC will arm

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## 4.0 Using your ESC

Once the battery connector is installed and ESC is connected and calibrated to your radio, the ESC will arm once the battery is plugged in. There is no on off switch on this ESC, so the battery must be unplugged after use. Full programming can be done on the computer via the Castle Link© software and USB programmer. Minimal features are available with stick programming.

### Special tuning modes

**Holmes Hold (active brake):** This feature allows for a much stronger brake at neutral throttle position. It is controlled by the % of drag brake selected. If this setting is turned too high, it will cause buzzing and motor creep. When you enable Holmes Hold, try turning down the drag brake if you experience these problems.

**Throttle Damping:** This feature allows for a smoother throttle action, with independent throttle up and down control. When activated, it smooths out throttle inputs. Throttle Up Damping can slow down throttle increases. This can be useful for preventing broken drivetrain parts. Throttle Down Damping slows down the release of throttle, which can be useful to prevent jerky stops with light rigs or worm gear axles.

### Entering stick programming mode:

Plug a battery into the ESC and hold full throttle on the transmitter before the ESC arms, or have a helper hold full throttle *before* you plug in the battery. After a few seconds you will get the four rings in a row signaling full throttle calibration. **Keep holding full throttle.** After a few more seconds, you will hear another four rings in a row. After the second group of four rings, relax the throttle to neutral. If you have successfully entered programming mode, the ESC will beep twice, pause, and repeat the two beeps.

The programming sequence is always presented in sequential order and always starts with the first setting (No cutoff voltage) within the first section (Cutoff Voltage). The first beep(s) signifies which section of the programming you are in and the second beep(s) signifies which setting is waiting for a “yes” or “no” answer

### Stick Programming

**Full throttle = “yes”; Full Reverse = “no”**

#### Question 1) Cutoff Voltage

- Option 1) No cutoff voltage
- Option 2) Auto-Lipo

#### Question 2) Drag Brake/Hold Brake Strength

- Option 1) Off
- Option 2) 25%
- Option 3) 50%
- Option 4) 75%
- Option 5) 100%

#### Question 3) Hold Brake

- Option 1) Hold Brake On
- Option 2) Hold Brake Off

## 5.0 Troubleshooting

- ESC buzzes or at neutral
  - Turn off Holmes Hold, or turn down drag %
- Drag brake or Throttle Damping doesn't work properly
  - Recalibrate ESC to radio
  - Ensure that neutral setting on radio is adjusted properly
  - Reprogram ESC
- No lights on ESC
  - Check that battery is plugged in, and polarized correctly
- No power to motor
  - Ensure motor is plugged into ESC properly
  - Ensure motor is in good condition and brushes are properly operational
  - Ensure Battery is plugged into ESC properly
  - Ensure ESC is arming and plugged into RX properly
  - Ensure Battery is fully charged
- ESC wont arm (all lights blinking)
  - Double check that radio is on, and that ESC is plugged into RX properly
  - Try adjusting neutral on your transmitter, or reversing your throttle channel

If you have further troubles, contact us at [Sales@HolmesHobbies.com](mailto:Sales@HolmesHobbies.com) or [Warranty@HolmesHobbies.com](mailto:Warranty@HolmesHobbies.com)