

# Himax

## Brushless Outrunner Motor

### HC2808 Series Motor

HC2808-0860

HC2808-0980

HC2808-1160



Himax Brushless motors are manufactured to high standards for the discerning modeler. Designed for light-weight, high efficiency, high torque, and durability Himax Outrunner motors are sure to make today's radio controlled models perform. Please read the entire operating manual to ensure correct functionality and best performance. The HC2808 series motor is made for small to medium size models weighing 9 to 20 ounces.

#### Features:

High Efficiency - High Power - High Torque - Light-weight - Replacement for 370-400 Motors

#### Specifications:

Weight: HC2808 Series 47g, (1.66oz), Motor with stick mount

Max Power: HC2808 Series 110W, (This is dependent on several factors)

Max RPM: 20,000 RPM

Diameter: 27.8mm, (1.09")

Length: 24.7mm, (.97")

Shaft Diameter: 3.17mm (.125")

Mounting Screw Thread: 2.5mm, max depth 4.5mm, on 16mm, (.625") bolt circle

Maximum Case Temperature: 65°C, (149°F)

#### Electrical Specifications:

HC2808-0860 Kv = 860, Rm = .255, Io = 0.36, Efficient Operating Current = 2-7A, 11A Max 15 seconds

HC2808-0980 Kv = 980, Rm = .220, Io = 0.4, Efficient Operating Current = 3-8A, 12A Max 15 seconds

HC2808-1160 Kv = 1160, Rm = .150, Io = 0.6, Efficient Operating Current = 5-11A, 15A Max 15 seconds

#### Operation:

1. Himax Brushless motors require brushless sensorless speed controls. Failure to use a brushless sensorless electronic speed control (ESC) can result in damage to the motor and/or ESC. A Castle Creations Phoenix series ESC is recommended for best performance. The standard setting for timing advance is recommended for best operation.
2. The three wires of the motor can be connected to the three output leads of the ESC in any order. Check the direction of rotation of the motor. If the motor spins in the wrong direction switching any **two** of the motor wires will reverse rotation. Be sure to insulate the wires to prevent shorting which may damage the ESC.
3. **Do not shorten the motor wires.** Shortening or cutting the motor wires voids the warranty and may cause motor failure. If the supplied connectors are not to be used, remove them by desoldering. **DO NOT CUT THE CONNECTORS OFF!**
4. Allow for proper cooling of the motor during operation. With extremely high capacity batteries, care must be taken to prevent excessive motor temperature. Overheating of the motor is not covered under warranty. Insufficient cooling can result in overheated motors, even when operated at moderate power levels.
5. Do not disassemble the motor. Disassembling the motor voids the warranty. If service is required please return the unit to Maxx Products for service.
6. Install the propeller after proper rotation has been determined. Consult the ESC operation manual for proper arming and use procedures. Be sure the prop is clear before starting the motor. Once the battery is plugged in stay clear of the prop, electric motors are capable of extremely high torque and can be very dangerous.

REV: B , 10/19/04

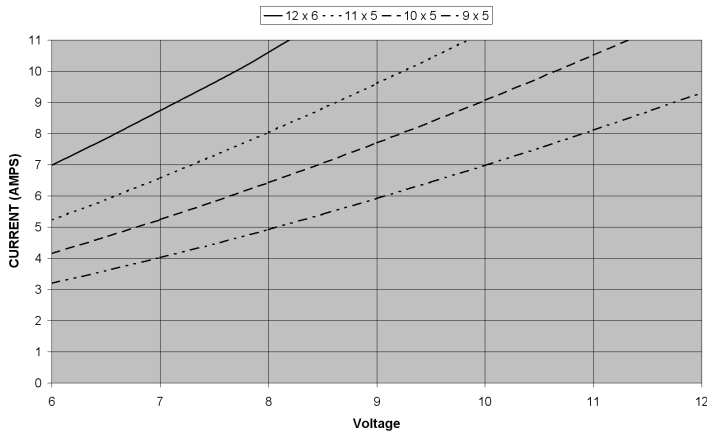
**MAXX PRODUCTS INTERNATIONAL, INC.**

815 OAKWOOD RD, UNIT D, LAKE ZURICH, IL 60047, USA

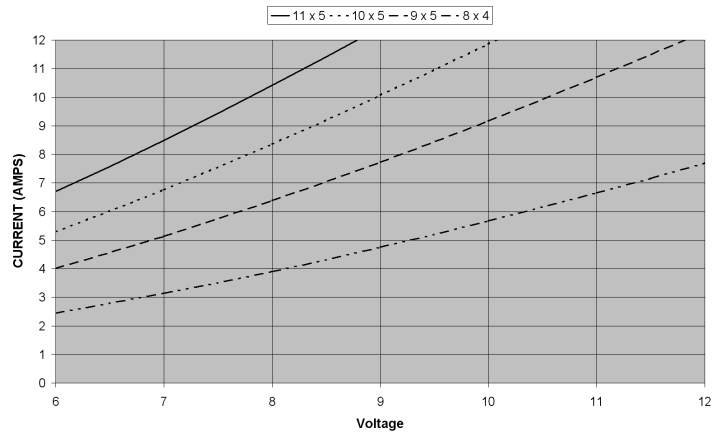
Phone: (847)438-2233 Fax: (847)438-2898 Website: [www.maxxprod.com](http://www.maxxprod.com)

**MPi**

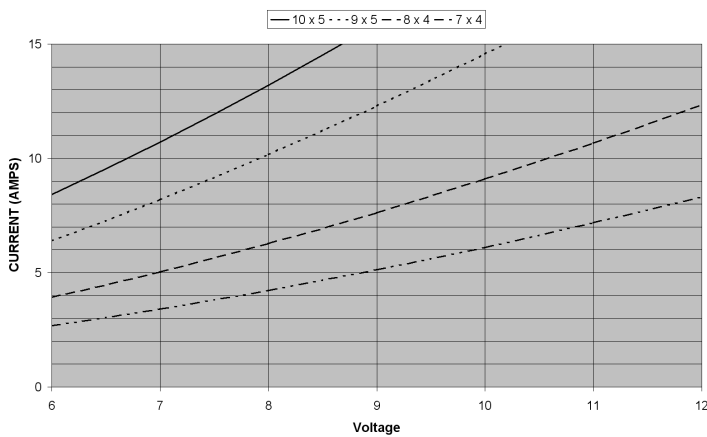
HC2808-0860 Current vs. Voltage with propeller



HC2808-0980 Current vs. Voltage with propeller



HC2808-1160 Current vs. Voltage with propeller



**Choosing a power system:**

Power system can be chosen based on the type of flying expected of the model and all up weight of the aircraft. Sedate flying from a hand launch requires 35 watts per pound(W/Lb). Taking off the ground needs approximately 50W/Lb. Aerobatics and good climb performance, 75W/Lb. Anything more than 75W/Lb will result in excellent performance. Based on the weight of the model and the flying desired, the power require can be calculated. Select the voltage of the battery being used. It is best to use a loaded voltage of about 90% of nominal. Now, calculate the current required. From the chart, pick a motor at the voltage you intend to use and find the prop that pull the required current.

**Maintenance:**

Brushless motors are almost maintenance free, so minimal care is required for long life. Keep the motor clean free of dust and dirt, especially the bearings. Dirty bearings wear quickly. Lubricate the bearings regularly with light oil. Do not immerse the motor in water, or solvents. Do not bend the wires excessively and secure wires to prevent breakage due to fatigue from vibration. Always used balanced propellers to reduce loads on bearings, to reduce noise, and reduce stress on the airframe. Be careful to install pinion gears properly. Improperly installed press fit pinion gears can result in damaged bearings, bent or broken shafts, or broken rotor assemblies. If in doubt, use set screw secured or glue-on type gears to prevent damage.

**Warranty:**

Himax motors have a two year limited warranty to the original owner, excluding gearboxes. All motors are guaranteed to be free from manufacturing defects within two years of date of purchase. Not covered under warranty is crash damage, customer abuse, improper use, or overheating. Warranty claims should be handled by the dealer or directly with Maxx Products, 815 Oakwood Rd, Unit D, Lake Zurich, IL 60047. Be sure to include contact information and a description of the problem including which ESC, battery, and prop was being used.

**Service:**

Himax motors in need of service should be sent to Maxx Products, 815 Oakwood Rd, Unit D, Lake Zurich, IL 60047. Please include a note explaining the problem. Return shipping for repair estimates must be prepaid.