Brushless DC Motor Information

About Brushless Motors

The primary difference between brushless motors and their brush type antecedents is that brushless motors are electronically commutated. Commutation is accomplished with Hall elements, encoder feedback or by counter EMF.

Factors Affecting Motor Life

The primary failure mode for brushless motors is bearing failure. For this reason, and due to the use of industrial grade electronic components, our brushless motors are capable of lifetimes in excess of 20,000 or more hours. The ball bearing systems incorporated into these motors are permanently lubricated with special grease. Re-lubrication is neither necessary nor recommended. The use of non-approved lubricants on the motor components can have a negative effect on motor function and lifetime.

Temperature is also a factor that limits the life of any motor. Heat is generated in the motor windings and must be dissipated primarily through the motor casing. The maximum rotor temperature shown on the Micro-Drives data sheet may not be exceeded, even for a short period of time, or the motor may be irreparably damaged. The motor's ability to perform is directly related to the difference between ambient temperature and the maximum permissible rotor temperature, as well as the duty cycle. Winding resistance rises and magnetic forces decrease as temperature rises. This results in decreased performance. These factors must be considered when operating at high continuous loads. Measures such as forced air-cooling and heat sinking can significantly lower motor operating temperatures.

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