عنوان مقاله:

A Novel Brushless Synchro: Operation Principle and Experimental Results

محل انتشار:

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خلاصه مقاله:

In synchroes and resolvers, brushes and slip-rings produce a lot of noise in the output signal. Compared to encoders, the application of such position sensors in precision control systemsare restricted because of their lower accuracy. In this research, a novel scheme of a brushless synchro is introduced. In this scheme,the secondary windings are mounted on the stator and the stator magnetic flux passes a certain path in the rotor and induces voltagein the secondary windings. The operation principle is clearly described in the paper and by using 2D finite element method thenovel synchro is initially designed and analyzed. The stator winding's turns is calculated by a method based on desired harmonic elimination to have a sinusoidal magneto motive force. A prototype has been fabricated and tested. .The experimental results are in good agreement with simulations and verify the theoretical concepts

کلمات کلیدی:

Three-phase brushless synchro, E-shaped stator, harmonic elimination