



Permanent Magnet Synchronous Motor

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The Invention

A permanent magnet synchronous motor includes a stator with a stator winding, a rotor with a rotor core rotatable relative to the stator, and a magnetic structure with at least one permanent magnet mounted to the rotor core. The magnetic structure produces a magnetic flux that flows between different magnetic poles of the magnetic structure through a main magnetic flux path that passes through the stator winding of the stator via an air gap and a leakage magnetic flux path that is located within the rotor core about an end portion of the permanent magnet near the air gap. The stator, the rotor and the magnetic structure being further configured to satisfy predetermined relationships in regards to the magnetic resistance of the main magnetic flux path and the leakage magnetic flux path, the magnetomotive force of the magnets and the stator.

Tech Fields

- [Engineering : Electric machines](#)

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