Abstract

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Conducting screen utilization in switched reluctance motors

The torque production of the switched reluctance motor is a function of the ratio of the unaligned inductance to the aligned inductance and decreasing this ratio will result in increased torque development. In this paper, non-magnetic electrical conducting screens on the rotor are used to achieve a reduction in the effective unaligned ac inductance due to the eddy currents produced in these screens. Non-magnetic electrical conducting end laminations on both the rotor and stator stacks are used to minimise end flux leakage. Experimental and analytical methods of evaluating the effects of conducting screens and copper stack end laminations are detailed.