

عنوان مقاله:

The Machine Performance is Studied and Compared in Three Different Conditions

محل انتشار:

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خلاصه مقاله:

Multiphase electric machines have the capability to operate under fault conditions such as one or two open phases, but the machine performance is affected due to these faults. In this paper, the machine performance is studied and compared in three different conditions: open-circuit fault of one, two or three phases. Three methods of compensation are analysed to reduce the torque ripples and machine losses and improve the control of the machine consequently. The first method is based on regulating the currents of phases to obtain a sinusoidal EMF. In the second method, only one of the currents of phases is changed to reduce the torque ripples. The third method is based on the controlling of $\alpha\beta$ currents to reduce the torque ripples indirectly. The first method is preferred to the others in case of implementation and cost. If lower complexity of the method is considered, the second method will be a better choice. Based on the control algorithm and implementation on traditional control systems, the third method is the most appropriate one.

کلمات کلیدی:

six-phase induction motor; compensation; symmetrical and asymmetrical winding; open-circuit fault

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