Effect of Stator Winding Faults on Performance Characteristics of Three Phase Induction Motor (TPIM)

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Abstract

To carry out the induction machine analysis under dynamic, transient and steady state conditions, the analytical techniques are used to simulate the TPIM. Here, the Park’s transformation is used to transform balanced 3-Φ currents \(i_a, i_b, \) and \(i_c\) to balanced 2-Φ currents \(i_\alpha, \) and \(i_\beta\) to accurately model the TPIM. In this paper, an accurate mathematical model is developed for induction motor and the effect of stator winding faults (like one, two or all three phase winding(s) short circuited by 10%, 20%, 30% and 40%) on its performance characteristics have been studied under different operating conditions.

References


**Index Terms**

Computer Science  
Circuits and Systems

**Keywords**

induction motor modelling, motor characteristics, motor faults, park's transformation.