

Abstract

Theory and analysis of three phase series connected parametric motors

This paper present the steady-state performance of three phase wound-rotor parametric motor. This type of motor can be practically realized by series connection of stator and rotor phase of conventional wound-rotor induction machine. The analysis is based on the d-q axes model, from which a phasor diagram is presented. The analysis is extended to include the magnetic saturation effect. Comparison between theoretical experimental results showed a satisfactory agreement proving the validity of the mathematical model as well as magnetic saturation effect representation. Also the motor stability is investigated.