

Diagnosis of static eccentricity fault in line start permanent magnet synchronous motor

ABSTRACT

In this paper, finite element method is employed for diagnosis of static eccentricity in line start permanent magnet synchronous motor. The motor is modeled with different degrees of eccentricity. Stator current spectrum of healthy and faulty motor are analyzed using power spectral density technique. Amplitudes of harmonic components around fundamental frequency in stator current spectrum are proposed for static eccentricity detection in this type of motor.

Keyword: Fault detection; FEM; LSPMSM; Static eccentricity; Stator current