

TOWARDS DIAGNOSING A SHORT CIRCUIT DEFECT IN A PMSM

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ABSTRACT

Synchronous generators are used in power plants to a great extent. The reconstitution is fulfilled by a stator providing the charge and a rotor providing the magnetic field. A permanent magnet or direct current in the filed field can constitute the source of the magnetic field. In this article, the subject proposed consists in diagnosing a three-stage short-circuit in a synchronous perpetual magnet device, fielded by an inverter with three pulse width modulation voltage levels, by means of insubstantial examination of the stator electricity. Researches show that during a short circuit, it is principally the stator resistance that rises in a considerable way. Concerning this, we will first establish the operational engine model. Then, we will give the motor attenuation model, and process the outcomes eventually to finally compare the harmonic spectra of the currents of the two designs. Prior understanding of a fault from an uncomplicated spectrogram avoids total machine malfunction

KEYWORDS: Inverter of voltage pulse width modulation on three levels, synchronous machine with permanent magnets, defect of short circuit, spectra analyzes, stator current oscillations.