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Acceptance Testing of the Six-Phase Asynchronous Machines

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Abstract

This paper addresses to the issue of program organization and testing attempts to accept with 6 phases machines, a less researched field. According to the standards, several tests, in particular those of experimental definition of the parameters, it must be performed at a sinusoidal supply voltage, which imposes the need to develop and manufacture new test equipment, involving substantial costs. The paper argues for a way to perform tests that require sinusoidal voltage supply, by transforming the six-phase asynchronous machine (with an even number of three-phase systems) by simple procedures for reconnecting the phase windings, in a symmetrical three-phase. This allows tests to be performed in no-load operation, with load and short-circuit mode, using the standard equipment of three-phase electrical machine testing laboratories. This eliminates the need for new multiphase sinusoidal power supply equipment.

Keywords: magnetic fluxes, measurement errors, voltage, power supplies, windings, stator windings, urban electric transport, six-phase electric machines, multiphase power supplies

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