COMPARATIVE ANALYSIS OF HARMONIC DISTORTIONS FROM VARIABLE FREQUENCY INDUCTION MOTOR DRIVES

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ABSTRACT

The undoubted advantages of induction motor drives fed by frequency inverters, for energy efficiency improvement inclusive, have led to their increasing utilization in practice. Their application results in generation of harmonic distortions that have an adverse effect on electromagnetic compatibility. This paper presents a study of the degree of harmonic current distortions in the electric supply system caused by variable frequency drives of different manufacturers at varying loads. It has been established how the values of the total harmonic distortion and the crest factor change at no load and at rated load applied to the studied frequency inverters. As a result of the performed analysis of the generated harmonics, the most pronounced harmonics of the power line current have been determined, which must be filtered in order to prevent disturbance of the electromagnetic compatibility.