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Power factor improvement using rnsic rectifier

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Abstract

This paper proposes a practical new method for power factor compensation of a three-phase bridge uncontrolled rectifier with a dc filter and nonlinear load. The proposed method is based on the rectifier with near sinusoidal currents called RNSIC, which functions as power factor compensation in a wide range of load currents. The decrease of input currents harmonics, below the limits imposed by IEEE 519/1992 and IEC 61000-3-4 international standards, allows the decrease of THD, hence the increase in real power factor. The validity of proposed method is supported by the practical results obtained by means of an experimental bench.

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Engineering main heading: Electric rectifiers

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