A COMPARATIVE ASSESSMENT OF BRAZILIAN ELECTRIC MOTORS PERFORMANCE WITH MINIMUM EFFICIENCY STANDARDS

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The industrial electric motor is the most important load, considering its large number and associated energy consumption, being responsible for approximately 68% of the industrial energy consumption and 35% of the total electrical energy consumption in Brazil. This country, like others, is seeking to establish a regulation on the minimum efficiency index for electric motor equipment. This paper aims to present an overview of the installed park of industrial motors in Brazil and to evaluate the possible effects of such regulation. For this purpose, the measurement results obtained in the 2000–2012 period were used, which were extracted from the approximately 276 three-phase induction motors that had been sold and were being used in the Brazilian market, with a rated power in a large range from under 1 hp to over 150 hp. The analysis of the measurement results provided an overview of the average behavior of the induction motors in industry while considering energy efficiency and allowing estimates and proposals aiming at the improvement of the use of electrical energy.