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Design and implementation of speed control of a 3-phase induction motor using PWM controller
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Abstract
The number of dynamic machine systems using variable frequency dives (VFD)s has grown significantly in recent years. Improvements in the application and selection of equipment systems might result from a deeper familiarity with Variable Frequency Drives. The paper focus on energy-efficient speed regulation for a three-phase induction motor. The optimal performance and highest efficiency of a three-phase induction motor are achieved when a VFD (changeable Frequency Drive) is utilized to regulate the speed of the motor in conjunction with a changeable load. To demonstrate the validity of the notion of energy savings, an experimental setup is created using VFD, and the results are shown both with and without VFD. In our experimental setup, by dampening the vibrations produced by the motor at startup, variable frequency drives (VFDs) save a significant amount of power. © 2024 Author(s).

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