

Performance Improvement in Three Phase Squirrel Cage Induction Motor by VFD Method

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Abstract: *The three-phase squirrel cage induction motor is widely used in industrial applications due to its rugged construction, reliability, and low maintenance requirements. However, its performance is greatly influenced by supply voltage, frequency variations, and load conditions. This project focuses on improving the overall performance of the induction motor by integrating a Variable Frequency Drive (VFD) system. A VFD allows precise control of input frequency and voltage, enabling smooth speed regulation, enhanced torque characteristics, reduced starting current, and improved operational efficiency.*

Keywords: VFD – Controls motor speed and voltage. Induction Motor – Main motor whose performance is improved, V/F Control – Keeps voltage and frequency balanced, Energy Efficiency – Saves power

