

Control and speed stabilization of AC motor using 8051 microcontroller

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Abstract: In industrial practice, controlling and stabilizing the speed of AC motors is an important requirement. This project focuses on applying the 8051 microcontroller to effectively control motor speed. The main objective of the project is to design and implement a control system based on the 8051 microcontroller to optimize the rotational speed of AC motors while ensuring stability during operation. The research method combines theory with experimentation, including analyzing the dynamic model of the motor and designing a control algorithm based on it. The project is expected to provide an applicable solution that can improve the operational performance of systems using AC motors.

Keywords: AC induction motor, 8051 microcontroller, speed control, stable operation, industry