

ABSTRACT

In the modern industrial era , the need for appropriate means of production is necessary , because it is expected to improve production performance . Most of the tools the industry uses electricity as its main driving force , and most of the equipment of these machines still use manual methods in terms of setting the speed stability . Thus it is necessary to improve the reliability of the machines at work , especially in terms of work system settings that require a precision tool , power and ability to do the job in a long time.

In actual application in the industry , not just the type of electric motor that into consideration , but also the speed control system . Motor rotation speed setting is the best way to set the frequency of the input power supply . In this final project has been designed tool speed control single phase induction motor with power supply frequency regulation technique using a microcontroller input . The device consists of sub systems, including rectifier, inverter, and a controller.

From the research , obtained the stability control system speed 1 phase induction motor using frequency control method that uses a closed-loop control with feedback derived from the value of the voltage coming out of the DC motor is coupled to the induction motor . Microcontroller reads the ADC value then the value is used as a correction by comparing the set point value (25 Hz) to determine the error value , present value and then obtained the frequency value displayed on the LCD display device . Frequency value can be controlled from 0 Hz to 50Hz with an increase and a decrease of 1 Hz, with a minimum speed 0 rpm and maximum speed 3450 rpm.

Key word : Motor Induction 1 Phasa, Inverter , Rectifier, rpm, present value, set point, Mikrokontroler