Speed Control of Induction Motor by Variable Frequency Control Through the MATLAB Simulation.

Krunal Kolhe[1], Arit Zole[2], Ankush Shewale[3], Aarit Waghchaure[4], Pooja Bhavar[5]

[1234]UG student, Department of Electrical Engineering, Sanghavi College of Engineering, Nashik, India.

[5]Professor, Department of Electrical Engineering, Sanghavi College of Engineering, Nashik, India

[1]Sanghavi College of Engineering, Nashik, India.

Abstract - This paper explains Variable Frequency Control method that is used to control the speed of an induction motor. Speed control means change the drive speed as desired by the process to maintain different process parameter at different load. The speed of the motor can be controlled by varying the supply frequency. We are controlling frequency, voltage and current based on sinusoidal waveforms for 3 phase induction motor using matlab stimulation. This waveforms will helps to detect effect on rotor speed. This will overcome causes that can damage to induction motor. The purposed matlab program can be customized according to different motors.

Index Terms - Induction motor, Load, Power supply, Relay, MATLAB.

I. INTRODUCTION

In today's world it is impossible to do anything without electricity. Electricity has become heart of major of Industries. Induction motor is used in for many Industrial purpose because of its low maintenance & efficiency. Many methods are used for the speed control of the induction motor. A three-phase induction motor is basically a constant speed motor. The speed control of induction motor is done at the cost of decrease in efficiency and low electrical power factor. No physical presence of worker is required near induction motor as all readings will be display on the monitor screen. Project make easy understanding of output of induction motor.

II. LITERATURE SURVEY

Various methods of speed control have been discussed by Sharjil Rahman and Aidil Azwin Bin Zainal Abidin in there paper. The first basic principal of speed control techniques has been reviewed and comparison has been made [1]. The design & implementation of voltage & frequency ratio constant & controller based on sinusoidal pulse width modulation technique for a single phase induction motor using fuzzy logic has been mentioned in the paper[2]. Review of the various authors has been studied on the speed control of induction motor. It reviews methodology such as speed variations, current and voltage ripple or harmonics through scalar control methods[3]. Used MATLAB Simulink documentation for coding the project[6].
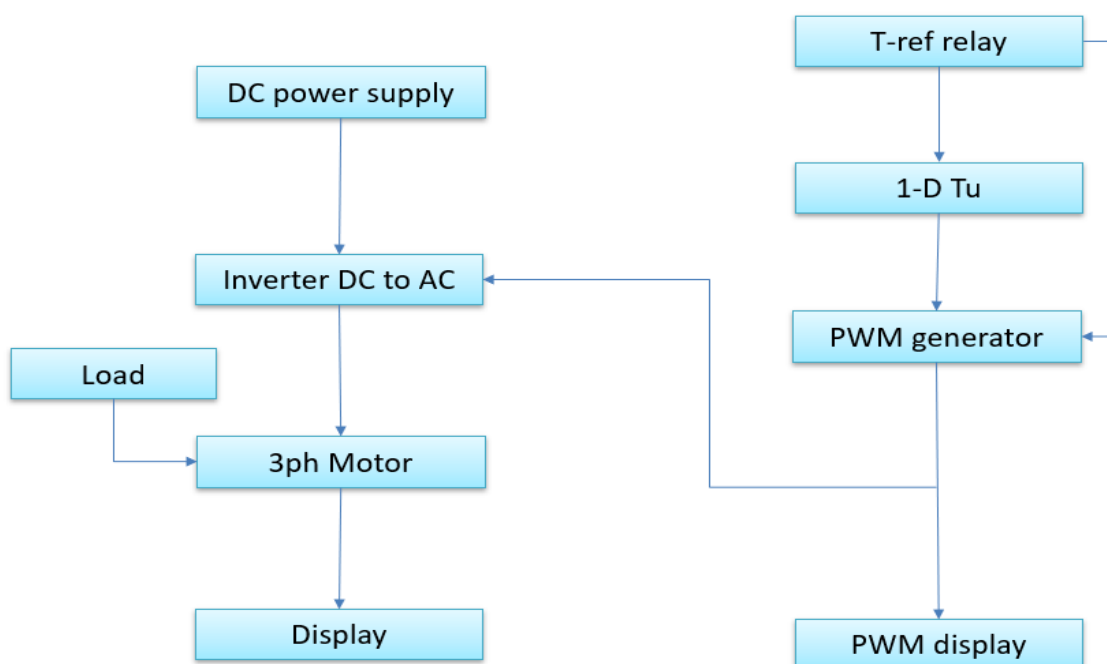
III. WORKFLOW

Fig.1. WORKFLOW DIAGRAM

Inverter will convert the DC power supply to 3 phase AC. This supply will be pass to 3 phase induction motor. As per required actual load the display will finalized the output of stator's voltage, current and rotor's speed, voltage as well as current. T-ref replay will give the signal to PWM generator if there any fault will occur. PWM generator generates pules for carrier-based pules width modulation converters using two-level topology. 1-D Tu acts as a stabilizer. PWM display will display the output of waveform generated by PWM generator.

IV. REFERENCES

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