A FAST BRAKING METHOD OF INDUCTION MOTOR

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TABLE OF CONTENTS

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ABSTRACT

The main objective of this project is to developed a fast braking method of induction motor by using self-excitation effect. A proper value of capacitor must be choosen to achieved an effective braking. A Turbo Pascal computer programming is developed to determine and compute appropriate optimum value of braking capacitors and the braking duration for each value capacitor value.. The analysis of this project consists of theoritical and practical testing of experimental model developed in the laboratory. Results from both computation and experiment readings were determined and analysed.

1.0 INTRODUCTION

1.1 General

In this project, a braking method utilising the capacitor self-excitation principle is used. Braking of induction motor is an important aspect of driven systems when sudden stopping is demanded either due to emergency or for other operation point of view. A few example for such applications include the instantaneous braking of induction motor driven saw blades for cutting logs in large sawmill and positioning of aircraft model in the wind tunnel testing where platform supporting the air craft model had to be moved in various directions and stopped suddenly at desired predetemined position.

A succesfull braking is achieved correctly mathing the motor winding reactances with the capacitace of braking capacitor. A computer programming is developed to predict the appropriate range of capacitors value. The program is based on matematic formulation of the perfomance theory of the Induction Motor. The results from the computer computation is then verify with the experimental results.