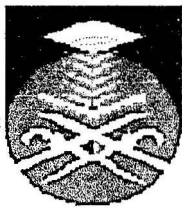


**SAB80C166 MICROCONTROLLER-BASED INVERTER FOR
THREE-PHASE INDUCTION MOTOR DRIVE**

This thesis is presented in partial fulfillment for the award of the
Bachelor of Electrical Engineering (Honors)
UNIVERSITY TEKNOLOGI MARA



SYARIMIN BIN SAHARI
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
40450 SHAH ALAM,
SELANGOR DARUL EHSAN,
MALAYSIA.
MAY 2003

ACKNOWLEDGEMENT

All praises be to Allah, Lord of the Universe, the Merciful and Beneficent to Prophet Muhammad S.A.W, His Companions and the people who follow His path.

First and foremost, I would like to take this opportunity to express my sincerely gratitude and appreciation to my family for the given support through my university years.

Secondly, to my project supervisor, Tuan Haji Ishak bin Ismail, for taking the time through the whole project year and offering clear and enthusiastic explanation. May Allah bless you.

Lastly, I also would like to thank to the following people:

Prof. Madya Dr. Fadhil bin Saidon for lending me his RMB 166 microcontroller board in the General Machine Lab. My fellow friends in the Power Electronics labs, for offering good ideas. To Encik Abu Bakar, Encik. Nordin and Encik Bakeri thank you for the assistance offered along the laboratory experimental work.

Thank you.

Syarimin b. Sahari

Universiti Teknologi Mara

Shah Alam, Selangor Darul Ehsan.

ABSTRACT

This project presents a simple constant volt per hertz control, six-step output voltage for a three-phase induction motor drive. Essentially, an open loop speed control scheme is adopted. The constant V/f speed control involves simultaneous adjustment of terminal voltage and supply frequency in order to achieve variable speed with constant torque. The present project used a Siemens SAB 80C166 microcontroller to implement variable control parameter.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Nowadays, industry places high demand on control accuracies, flexibility, ease of operation, and repeatability of parameters for many application such as in induction motor drives are the main desirable features. To meet these requirements, use of microcontrollers has become imperative [1]. The advantage of microcontroller-based control over the conventional discrete hardware-based control can be easily recognized for complex drives control system. The software control algorithm can be easily altered or improved without changing the hardware.

Since most of the motor in the industries are mainly of induction type, development of this field took place rapidly [1]. Induction motor, particularly squirrel-type induction motor, has a number of advantages when compared to d.c. motor. Some of these are ruggedness, lower maintenance requirement, better reliability, lower cost, weight, high efficiency and ability to operate in dirty and explosive environment due to the absence of commutators and brushes. Some of these virtues are of paramount important, which make the ac drive mandatory in several areas of application. In addition, when precision control is needed or close speed tracking in multimotor drives is required, the synchronous motor seems to be an obvious choice.

The replacement of discrete semiconductors by integrated power modules will help to substantially reduce the semiconductor packaging cost and the ultimate reality of mounting the integrated converter system on the machine frame is possibly are not far away.