

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

μ P DC MOTOR CONTROLLER

E/785

Design by
KRIKOR AVEDISSIAN

JUNE 1992



Introduction and the idea

The most common way in industry to start and stop a motor is by Relays and Timers. Nowadays after the boom of the Electronic world, new methods are introduced in control of machinery. i.e. microprocessors.

In this project the idea of controlling a D.C motor by a microprocessor is brought up. Where an interfacing part is put to "connect" the motor to the microprocessor. Where the information is processed to control the motor.

An Assembly programm is put in the RAM where accordingly the motor is working.

In this project the Assembly program is written to forward and Reverse start of the D.C. motor.

CONTENTS

| | Page |
|--|------|
| Acknowledgments | i |
| Introduction and the <u>idea</u> of the project | iii |
| | |
| <u>CHAPTER A:</u> <u>COMPONENTS</u> | |
| A) semiconductors | 1 |
| B) Resistors | 2 |
| C) optoelectronic. coupler | 3 |
| | |
| <u>CHAPTER B:</u> <u>Block Diagrams</u> | |
| a) The microprocessor part | 4 |
| b) The power part | 5 |
| | |
| <u>CHAPTER C:</u> <u>Microcontroller</u> | |
| a) Introduction | 6 |
| b) 8085 μ P | 6 |
| c) 8155 programmable interface Device | 7 |
| d) Assembly program and its explanation | 8 |
| | |
| <u>CHAPTER D:</u> <u>The power circuit</u> | |
| a) The cct Diagram | 10 |
| b) Design and Construction | 11 |
| c) Explanation of the cct | 11 |
| d) Basic Calculations | 13 |
| | |
| <u>CHAPTER E:</u> <u>TESTING</u> | 17 |
| | |
| <u>CHAPTER F:</u> <u>Applications and Comments</u> | 19 |
| | |
| References | 20 |
| | |
| Appendices | |