



PORTABLE PUMP TYRE INFLATOR

ADI MUSTAKIM B AB RAHIM
NIK MUHAMAD SYAZWAN B NEK OMAR

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

SEPTEMBER 2015

ACKNOWLEDGEMENT

We would like to express our deepest appreciation to all those who provided us the possibility to complete this report. A special gratitude we give to our final year project supervisor, Mr. Muhammad Rajaie Bin Dzulkifli, whose contribution in stimulating suggestions and encouragement, helped us to coordinate our project especially in writing this report.

Furthermore we would also like to acknowledge with much appreciation the crucial role of the staff of UiTM Pasir Gudang, who gave the permission to use all required equipment and the necessary materials to complete the task “Portable Pump Tyre Inflator”. A special thanks goes to our friends who help us to assemble the parts and gave suggestion about the task “Portable Pump Tyre Inflator”. We have to appreciate the guidance given by other supervisor as well as the panels especially in our project presentation that has improved our presentation skills thanks to their comment and advices.

ABSTRACT

This is the summary of how our project work. This project is used a microcontroller PIC16F877A. The project is about how to interface the air compressor to the microcontroller. The air compressor need a 12 V and 10 amps supply to make sure air compressor running smoothly. From that, a car battery need to connect to air compressor . after the air compressor need to interface to the microcontroller to control by the switch. To do that, the transistor TIP142 is used to interface between air compressor and microcontroller. The air compressor is controll by swithch button. The process begin when the switch is turn on. The LCD display shows a pumping sign. Therefore, the air compressor will start pumping the tyre until it enough pressure. The LCD display will show not pumping sign if is switch turn off. The air compressor will not pumping if switch is turn off. The microcontroller also need a 5V. From that a voltage regulator LM7051 is used to step down the voltage from a battery and connect to microcontroller.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	APPROVAL SHEET	1
	CANDIDATE DECLARATION	11
	SUPERVISOR'S APPROVAL	11
	ACKNOWLEDGEMENT	111
	ABSTRACT	IV
	TABLE OF CONTENTS	v
	LIST OF FIGURE	vii
	LIST OF SYMBOL	viii
1	INTRODUCTION	
	1.1 Intoduction	1
	1.2 Problem Statement	2
	1.3 Objectives	2
	1.4 Scope of study	3
	1.5 Project Contribution	3
2	LITERATURE REVIEW	
	2.1 Microcontroller	4
	2.2 Application of PIC16F877A microcontroller	5
	2.3 LM7805	8
	2.4 TIP 142	9
	2.5 Liquid Crystal Display	10
	2.6 Air compressor	11
	2.7 Variable Resitor	12
	2.8 LED	13

CHAPTER 1

INTRODUCTION

In this chapter will explain about the summary of the project, objective, scope of study and the project contribution that can be applied in improving user's daily activities.

1.1 Introduction

Portable air compressor is design to help the people who has the problem with their tyre deflating. This product is useful especially in emergency if the user are hard to find facilities to pump their car tyre.

Furthermore it can used to avoid time wasting to user to queue on the petrol station with other user to pump their tyre. With this portable car tyre inflator user can pump their tyre anywhere nd anytime they want without need to share with other user.

Portable car tyre inflator also created to reduce the amount of the car accident on the road. The low or high pressure of the tyre can make a user probably facing car accident. This device can check the amount of presure tyre need to make sure the tyre is enough presure. This device also is created to easy the user to use and to carry and keep on their car. It also created can used directly from car ciggarrete supplies. User just need to connect the air compressor to the car ciggarrete and can straightly used the air compressor.