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FINAL REPORT:

TEMPERATURE CONTROLLER

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ABSTRACT

The project aims to design an automatic temperature controller for a closed area such as office room. The temperature of the closed area was controlled by the temperature controller at a certain setting level. The setting of temperature levels are set by the user according to the temperature they want to maintain at the room. Otherwise, the temperature of a closed area is change by the operation of fan or air conditioner. By controlled and maintain the temperature of an area, the problem of heat fluctuation in an electrical equipment especially can be solved. In this project, the cut off temperature level that will switch ON the system is set to 34°C. The system will switch OFF when the temperature of an area is below than 32°C. Proteus 7 software is used to simulate the design circuit. The main component used in the project is PIC microcontroller and temperature sensor LM 35. As a result, the project design was working according to the objective.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Nowadays, in globalization era there are always the foundation of the new technologies features every year. The air conditioning is widely used especially in equatorial countries especially Malaysia. Temperature controller system become the most popular features which rapidly gaining its popularity due to its importance to certain applications. Usually the conventional air conditioning is always cooling the room depending on the fixed temperature setting and is not automatically adjusted for the comfort of the users. In the central air conditioning control field, excellent real-time, high reliability, and good intelligence are proposed by many researchers.

The use of resident room air conditioner was studied in the United States (Kempton et al. 1992; Lutzenhiser 1992) and in Japan (Fuji and Lutzenhiser 1992). There are remarkable similarities with the result but also cultural differences. In Japan the goal is too cool people rather than living spaces, but in the United States (and in Finland) the target is too cool (and heat) rooms. It was found that in most household room air conditioners are used manually, switching the units on and off, instead of relying on thermostat. So, the closed loop control system is a type of automatically changes the output based on the difference between the measured signals to the reference signal. Temperature is one of the physical parameters to be measure and control for the related application. As the name implies, a temperature controller is an instrument used to control temperature. The temperature controller takes an input from a temperature sensor and has an output that is connected to a control element such as a conditioner or fan. This type of controller use electrical signal and digital to perform its receptive, comparative and corrective functions. Temperature is one of the process plant criteria.