MARA UNIVERSITY OF TECHNOLOGY

PROJECT II

ELECTRONIC CLIMATE CONTROLLER

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Abstract

Fundamental of Electronic Climate Controller (ECC) is temperature sensor. This temperature sensor has a temperature coefficient of reverse breakdown voltage equal to +10 mV /°K , is extrapolated to O mV at 0°K . Thus, at room temperature (298.2(K) , the voltage across IC4 (LM 335) should be 298.2 mV X 10 mV /°K = 2.982V. But, in practice it has some error due to self-heating and other related factors (heat sources). These errors are eliminated during the calibration procedure at last activity of construction. The dot/bar display driver IC2 (LM 3914) will drive 10 LEDs to show room temperature, where each of it is marked with certain temperature. Example, LED 1= 67(F and LED 2 = 69(F, if room temperature is 69(F both LEDs will ON. Whenever room temperature reach certain value Relay (RY 1) will switch ON fan or air-condition. The fan will OFF automatically when room temperature is equal with settled temperature on calibration procedure.

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1.0 Introduction

Basically Electronic Climate Controller (ECC) is created to give comfortable in our life time, whether in summer or winter season. If we see at the title ECC, directly we understand this is a device that control our climate (room or any closed space) to our desire temperature. As we known, most of the time we consider room temperature at 25°C. But, in reality is higher than that. It is will increase depend on thick of ozone layer and the amount of carbon dioxide in the atmosphere. Now, urbanisation and industrialisation has affected the increasing of earth temperature most of the world. So, to overcome this problem we need a device such as ECC to control our room temperature. It is suitable with the next millennium that every devices we created we prefer to comfortable and satisfaction. ECC is the right choice if we need all these thing. We do not need to switch ON or OFF our fan or air-condition manually. We do not need to wake up at late night to switch ON or OFF fan because of hot or cold. We also do not need remote controller to switch (ON/ OFF) our air-condition. But, we just need ECC as the alternative to all these situations. ECC will overcome all the problem automatically.