# Accurate Room Temperature Controller For Cryogenic Engines

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***Abstract :*** The basic initiative is to implement a Automatic Temperature System for cryogenic engines so as to maintain systems temperature,so this make it very important for students from engineering fields to perceive and see into the system .My project is based on construction of a MC based PCB driven Temperature System which uses a LCD display to show temperature of the system.An operating system can never be wrong in validating and planning of machine.

*IndexTerms-:*Temperature Controlled Ic's, Microcontroller, Embedded Systems

## I. INTRODUCTION

In the 21st Century development in technology growth is larger then ever and advancement is a lot more ealistic. Not very long time past, we intended not to worry concerning temperature watching system or house watching system wherever the it is detected by exploitation. However during this data era, it has become reality once tons of business and other people used this technology to suit their their needs. At the opposite place, a bunch of skilled individuals build a pursuit to implement the utilization of frequency in watching the temperature to be a lot of precise and reliable. it had been another form of frequency technologies within the world.

The main purpose of this Digital Temperature Controller is to mainatin the temperature of any system whose temperature keeps fluctuating and therefore needs a tiring watch on the device. My propose method eliminates tiresome watch on the system by controlling the temperature of the system on its own.

My system will overcome the use of thermostat/analog system,which can be applied into any firm or organization where ever temperature is to be kept under maintainance.LCD is used to display the temperature and regulate usage between the fan and the heater (ie-once the heater(lamp) stops the AC(fan) automatically starts working )and remains on till te temperature doesnot fall to the preset temperature.The system uses a digital temperature sensing element so as to observe temperature and depart this world the information to MC which in turn sends data to be displayed on LCD display screen which consist of seven segment display to show present values.I also consists of push buttons to set the temperature values to either high or low.upon pressing set button user can either increment or decrement th temperature according tohis likes or dislikes .In this way the sytem deects temperature change and swithches between fan and load if temperature varies from preset values.

## II. Literature Survey

**[1]** The construction mentioned during this paper is that it provides a plan to produce a Automatic Temperature Controller to control the temperature of the system.temperature is maintained in a very explicit way The circuit,consists of Temperature Sensing Unit, PIC AT8952 C, LCD Display,Switches ,PCM,Fan and a Heater.The temperature sensor is used to sense the temperature and convert it into an electrical (analog) signal, which is applied to the micro controller through ADC. The analog signal is converted into digital format by using ADC. The detected and set values of the temperature area unit is displayed on the LCD. This is used to maintains the temperature of the system and a heater area unit is used to dominate the temperature of the system. The fan revolutions per minute will increase with increase in temperature and the other way around. The operating of the heater is additionally identical. The present temperature at intervals is calculated by using a DS1620 Ic.When the present temperature is at its lower limit , the system is cooled by employing a fan .When the present temperature is at its preset value no management action is required. The current temperature is displayed on the LCD.. TheDS1620 ic detects the temperature of the system.

**[2]**The make of this paper is to construct an automatic temperature system to regulate the temperature of a system. This circuit maintains the temperature of the system in a very special way. The Ds 1620 IC is used to see the temperature of the system. The Temperature sensing element is connected to the ADC input of the PIC .It converts the analog input to digital . The LCD display is additionally connected to the MC This module show the present temperature. The circuit construction, consists of an automatic switch fan and an automatic management of temperature of heater. The MC takes care of automation feature. The electrical fan

can mechanically start in step with the environmental natural process. The circuit is employing a microcontroller to regulate the fan in step with the temperature variations. The temperature of the system is measured Using sensing element. The microcontroller then give the signal increase or decrease the input voltage given to the heater specifies the temperature of the heater is maintained at intervals the desired vary.

**[3]** The paper presents us of an idea of an Automatic Temperature system. This method permits the user to set a desired temperature that is then compared to the preset temperature measured by a DS1620 Ic With th help of a MC,that turns ON a Fan or a heater depending on the temperature of the area. The Fan is turned ON as soon as the temperature is beyond the preset temperature and also the heater is turned ON once the temperature is less than the preset temperature. A transformer was used to give power to the. The system was made according to planning and specifications

## III. Propose Architecture

The temperature sensor is used to convert data into an electrical (analog) signal, that is applied to the MC through ADC.).The preset value of the is displayed on the LCD.
A circuit maintains the temperature of the system and a heater area unit is used to dominate the temperature of the system. The fan revolutions per minute will increase with increase in temperature and the other way around.. As the preset temperature is below the lower limit, the system should be heated by employing a constituent, air heater.[2]
When the present temperature is in lower limit of the preset temperature, the system is cooled by using a fan .When the temperature comes back to preset value the heater is turned on again . The currentis then displayed on thre LCD ..
The Temperature sensing element consists of an DS1620 IC. The temperature sensor is connected to the ADC input of the PIC. It converts the analog input to a digital value. The PIC is connected to a switching device relay. It is used to switch on the heater. [3]The fan is turned on by using a ON switch With increasing ON time, the speed of the fan or the heater will increase reducing the temperature of the system. The temperature of the system is measured Using sensing element. The MC then give the signal whether the temperature increase or decrease depending on the input voltage given to the heater.

## IV. Diagram

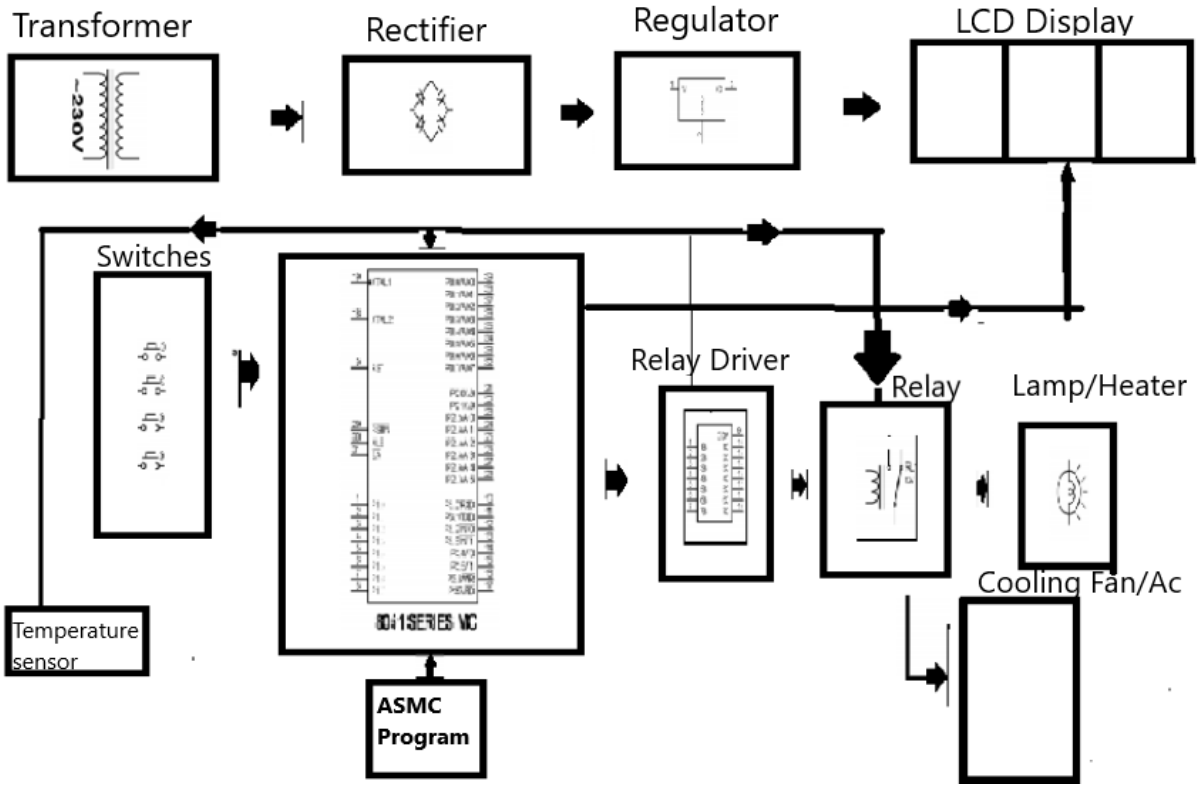


Fig:Block Diagram Of System

## V.Material and Methords [3]

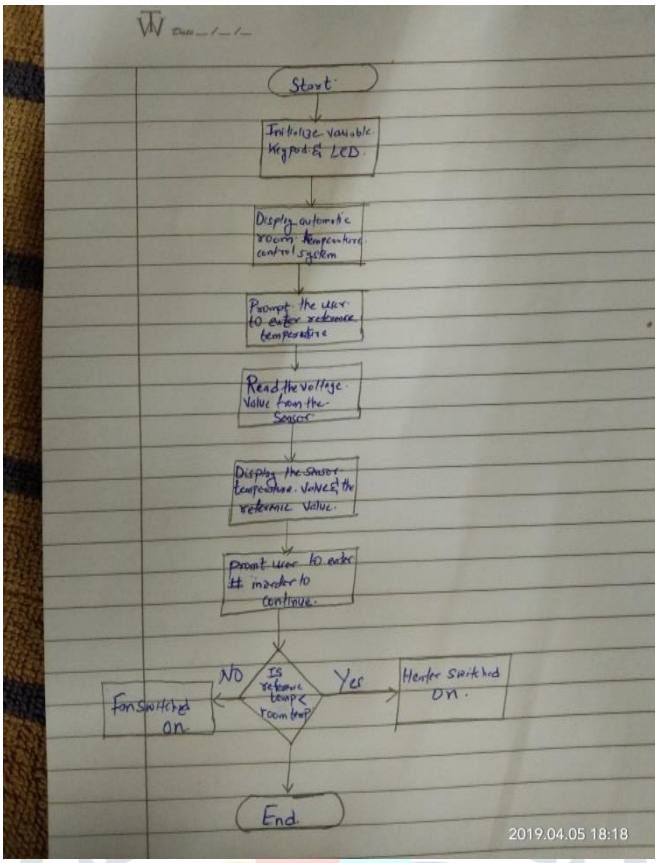


**Fig:Flow Diagram Of How System Works**

### Software Used

- Keil µVision 3
- Programming Language For MC : Embedded C/Java

## VI. Application

- Used in Automation of industrial as well as home and used to conserve the electrical power.
- They can be used in industries like in plastic industries thermoforming machines,for injection molding ,store food,process food and in blood banks

## VII. CONCLUSION AND SCOPE OF FUTURE WORK

The projects main objective is to control temperature of the proposed system in order to keep humidity/temperature in preset value. This system is quite useful because it is simple in use ,low in cost and power consumption and its small size.It is used in food industry for humidity control,for medical purpose-in incubators.In seed-testing for incubation.Used to maintain room Temperature according to requirnments.

The project can be enhanced in the future by increasing the number of fans ;so it will hep in industries and for medical purpose.

## VII. References

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