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GSM BASED BABY INCUBATOR

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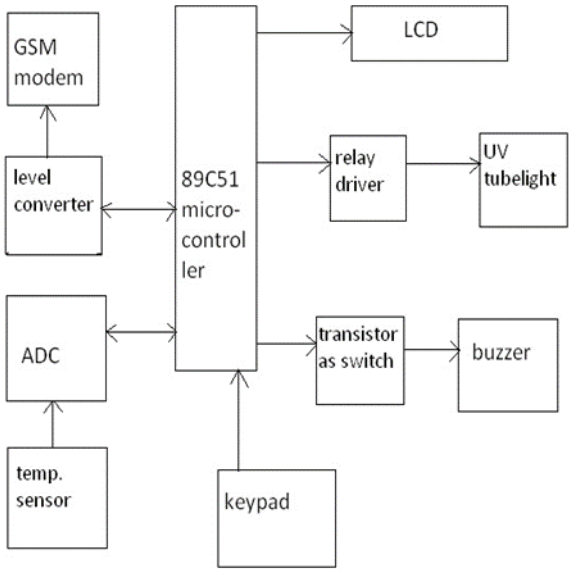
Abstract— **This paper discuss about the concept of a baby incubator. Baby incubator has been modified using temperature sensor . Whenever the temperature or humidity of the incubator changes, the buzzer goes on, indicating the change over the LCD display. As well as the temperature is brought back under control with the help of heater and a fan. Also a message is sent by the GSM model to the registered number about the temperature change making the overall system more secure.**

Index terms- **Microcontroller, GSM modem.**

I. INTRODUCTION

Incubators are an enclosed apparatus in which premature or unusually small babies are placed and which provides a controlled and protective environment for their care. Incubators shield infants from harmful cold and provide insulation from outside noise , making it easier for them to get plenty of rest. In baby incubator, temperature control is very important. And therefore we are controlling the temperature according to our requirements and sending the baby incubator status through GSM modem in SMS format. Temperature control can be done by using Electronic circuit, Microprocessor & microcontroller. Microcontroller being advanced among all the circuit, it is being used for temperature controlling of baby incubator. Microcontroller used is 89c51.

II. PROPOSED METHOD



1. BLOCK DIAGRAM

Figure 1. Block Diagram of Security System

Here low power, high-performance CMOS 8bit microprocessor with Flash Programmable and Erasable read only memory is being used. The output of signal conditioning is in analof form. But microprocessor requires input in digital fprm, henca analog to digital converter is used.

Output signal from microcontroller is weak so the signal is amplified. Amplifier block.i.e. relay driver amplifies the signal for driving the final control element i.e. output device. Relay is used as an amplifier which provides an amplified voltage to fan, buzzer and heater.

Keypad gives set point for temperature sensor, using reset key, enter, increment & decrementusing increment buttong a set pint is incremented and if decrement is pressed then set point will be decremented by 1. Once satisfied with set point then by pressing enter a set point is set.

Output of microcontroller is not sufficient to drive the buzzer directly. Therefore transistor is used as a switch to drive the buzzer. When temperature increases or decreses above the set point then Buzzer turns ON.

Microcontroller, temperature sensor, ADC requires+5Volts supply whereas +12 Volts is used to drive the relay.

III. MPLEMENTATION

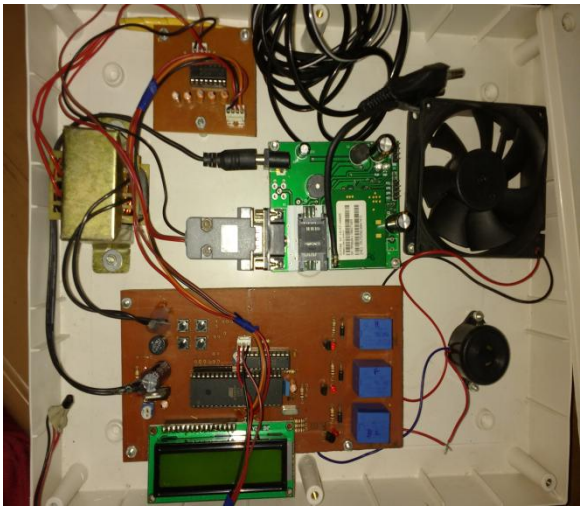


Figure 2. GSM based baby incubator circuit

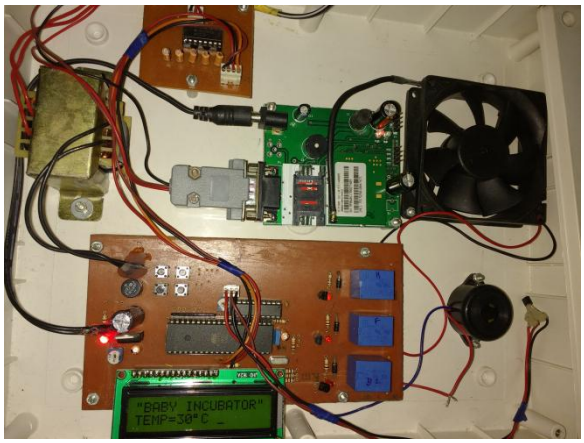


Figure 3. temperature set to 30 degree Celsius

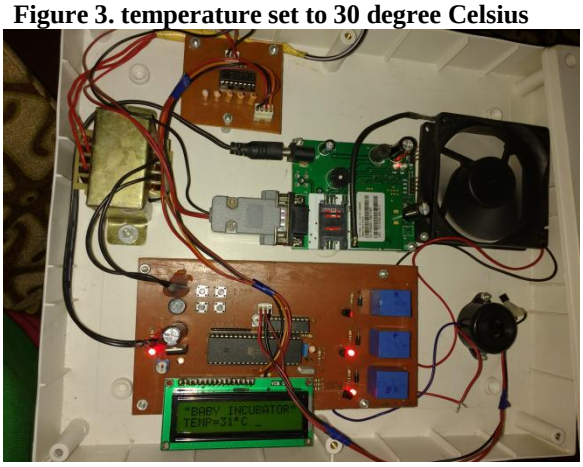


Figure 3. when temperature goes above the set value, fan is turned on

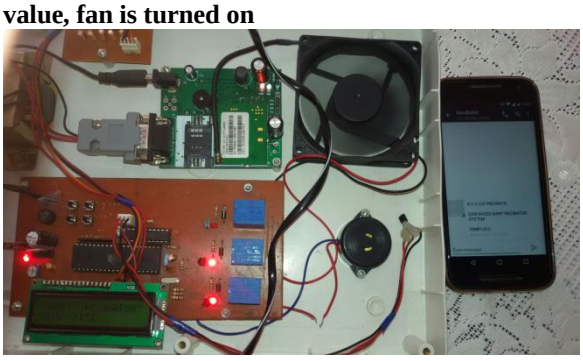


Figure 4. when the temperature changes with respect to set value, fan gets turned on and SMS in received via GSM Modem

IV. ADVANTAGES AND LIMITATIONS

1. ADVANTAGES

- Easy to implement because there are less components.
- Compact in size.
- Required temperature can be easily achieved due to temperature sensor.
- In case of system failure, a fan and a heater are also present as a backup plan, to bring the temperature back in control.
- The use of microcontroller makes this circuit very accurate, compatible and less costly

2. LIMITATIONS

- In case of power failure this project will not run, will require a supply backup.
- The incubator being a enclosed apparatus, the switch to backup supply has to be fast or else could lead to suffocation.

V. APPLICATIONS

- Hospitals: wud require less attendant time of doctors.
- As it is temperature controller, it can be used in domestic purpose
- The principle of this project can be used in industries like plastic, chemical and process

VI. CONCLUSION

This project is mainly aimed at controlling the temperature. Time is considerably saved by this temperature controlled system, as temperature is compared with set point. If this temperature is above set point then micro-controller gives logic high signal to amplifier to turn ON the fan and logic low signal to turn OFF the heater. If this temperature is below set point then microcontroller gives logic high signal to amplifier to turn ON the heater and logic low signal to turn OFF the

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