

Microcontroller Using Industrial Tank

Md Belal Bin Heyat¹, Shahabaz Ahmad Khan², Ahmad Zakariya³, Faijan Akhtar⁴ and Shajan Azad^{5, 3}

Department of Electronics and Instrumentation Engineering,^{1, 2, 3} Integral University, Lucknow, Uttar Pradesh, India

⁴Jamia Hamdard, New Delhi, India

⁵ Hayat Institute Lucknow, India

belalheyat@gmail.com¹

Paper Type: Review Paper

Abstract

A computer based heat, pressure and moisture monitoring & controller system using microcontroller. Records acquisition is an important protagonist in industry in direction to insure the quality of facility. Temperature sensor actions the temperature, humidity and gravity sensor measures stickiness and pressure respectively and creates corresponding analog pointer, which is further handled by the microcontroller. The records will be showed on the LCD in microcontroller and computer monitor. Computerisation and control can be ready with the comfort of control circuitry..

Keywords: Temperature Sensors; Microcontroller

I) INTRODUCTION

Developed parameter checking is very important. In the previously days it was ready manually but that was daring and difficult for somebody in units like heater boilers etc. With the enlargement of revolution in electronics the pleasant and automatic method has been deliberate that provide clarification to this with slightest error and recovered efficiency. This task is also scheme of temperature monitoring of enormous boiler using various sensor network and instruction of the device heater on/off as per the sharp threshold.

This task is based on Dallas's any wire heat sensor. The remarkable feature of one lead devices is that, it mechanism on a particular wire and also bidirectional. Moreover virtually infinite number of one wire devices can be connected only on a single wire. For a large boiler, we need multiple no of temperature sensor to sense the temperature of multiple locations within the boiler. All the temperature sensors are connected on the same one wire bus and data is given to the microcontroller. The controller displays data on LCD and also leads it to the PC to be projected. The controller also polices the heaters as per the inception set by the consumer that is on and off.

II) MATERIALS AND METHOD

Block Diagram of Industrial Tank Temperature, Pressure and Humidity Controller Using Microcontroller

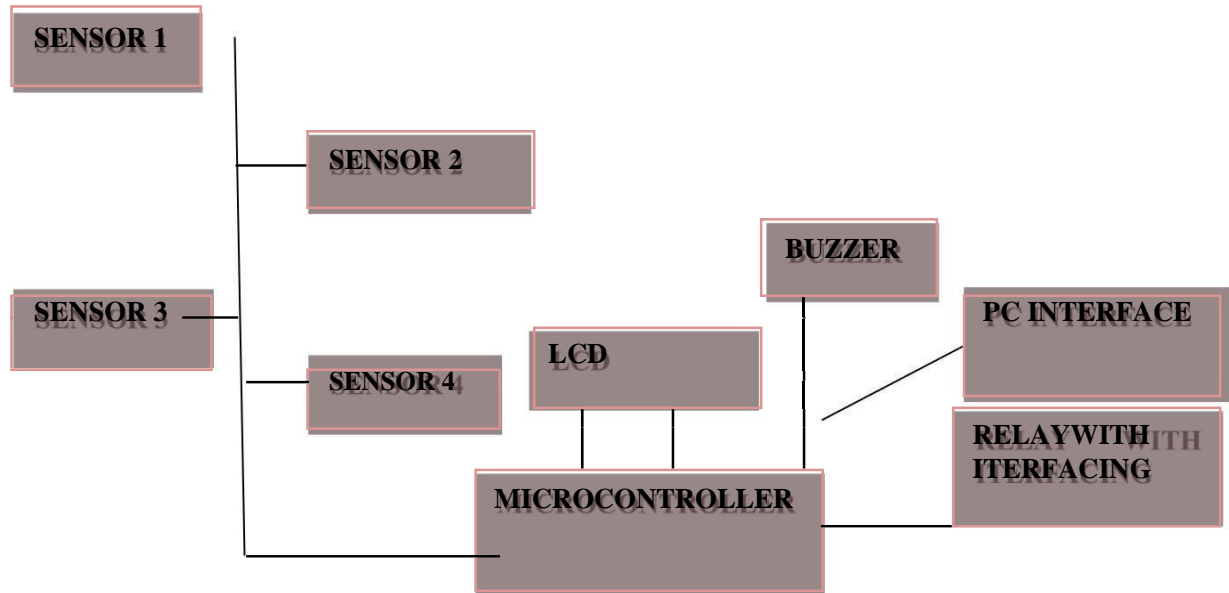


Fig 1: Block Diagram of Industrial Tank Temperature, Pressure and Humidity Controller Using Microcontroller

i. Input Section

Temperature sensor- This sensor will be interface to give data for temperature.

ii. Processing unit

Microcontroller- Programmed by the user to monitor the input and generate proper output for the output unit. In general this is the brain of the system.

iii. Output Section

- a) **16x2 LCD:** Used as display device for required data.
- b) **Relay Driver:** IC ULN2803 will be used which can drive the relay for switching as well as provide proper voltage and current.
- c) **Relay:** Used as automatic switch for device like heater
- d) **USB to UART interfacing:** Transferring data from controller to PC based on UART comm.

Working In Brief

Different temperature sensors are there as a slave devices. Here the master device is microcontroller. At a regular time interval the master keeps on initiating all the sensors and reads their values. Read temperature is displayed on the LCD. As the temperature of any location exceeds some predefined threshold temperature, the alarm system is generated and heating element is turned off of that location via relay driving unit. We have used four different sensor networks.

The controller also sends the data to PC to be logged via the USB to UART interfacing. The user can set the temperature threshold on the basis of which the temperature will be regulated.

COMPONENT DETAILS:

Hardware:

- DS18B20 temperature sensor
- Microcontroller
- Relay driver
- Relay
- LCD
- USB to UART module
- Power supply

III) APPLICATIONS

- Incubators
- Parameter monitoring of industrial machinery
- Green house in agro farming
- Where system are dependent on temperature
- Weather monitoring

IV) CONCLUSION

The Outline of this review is making by Microcontroller Using Industrial Tank is discussed. It's used in making of this device is make by different-2 instrument like Microcontrollers, Sensors, computer, Liquid Crystal Display, Relays etc. on future i.e. all are devices is connected by Wi-Fi, Li-Fi and Bluetooth i.e. no wires are used.

V) Acknowledgement

The Author and Co-author very Heartful thanks to my senior Er Shaguftah, Shipra Srivastava (Integral University, Lucknow), my friend Shahnawaz, Ammar Bin Hayat and my respected teacher (Integral University, Lucknow), basically Prof (Dr) Syed Hasan Saeed (HOD, Deptt of ECE), Mohd Maroof Siddiqui, Er Saima Beg, Er Naseem Ahmad help and support of my Research Paper.

REFERENCE

- [1] Text book of Predko, "Programming customizing ATmega168 microcontroller".
- [2] Text book of Gaonkar, "Microprocessor Architecture programming and application".
- [3] Text book of Gayakwad, "Op-Amps and linear integrated circuits".
- [4] www.encyclopedia.com
- [5] www.wikipedia.com
- [6] www.meome.com
- [7] www.wikibooks.com
- [8] www.bombshock.com
- [9] www.labsguru.com
- [10] Md Belal Bin Heyat, Shaguftah, Y.M.Hasan, M.M.Siddiqui, "EEG Signals and Wireless transfer of EEG Signals", International Journal of Advanced Research in Computer and Communication Engineering Volume 2015 December; 4(12): pp. 502-504.
- [11] Md Belal Bin Heyat, Faijan Akhtar, Mohd Sikandar Hayat Siddiqui, Shafan Azad, "An Overview of Dalk

Therapy and treatment of Insomnia by Dalk Therapy”, National Seminar on Research Methodology in Ilaj-Bit-Tadbeer, organized by State Takmeel-ut-Tib-College & Hospital, Lucknow 10 October 2015.

[12] Y.M.Hasan, Md Belal Bin Heyat, M.M.Siddiqui, S.Azad, and F.Akhtar, “An Overview of Sleep and Stages of Sleep”, International Journal of Advanced Research in Computer and Communication Engineering 2015 December; 4(12): pp. 505-507.

[13] Shaguftah, Mohd Maroof Siddiqui, “An Overview of Sleep Apnea and EEG Recording”, International Journal of Advanced Research in Computer Science and Software Engineering, 2015; 5(10): pp. 617-619.

[14] Omer Farooq, Touseef Rahman, Md Belal Bin Heyat, Mohd Maroof Siddiqui, Faijan Akhtar, “An Overview of NFLE”, International Journal of Innovative Research in Electrical, Electronics, Instrumentation & Control Engg 2016 March; 4(3): pp. 209-211.

[15] Touseef Rahman, Omer Farooq, Md Belal Bin Heyat, Mohd Maroof Siddiqui, “An Overview of Narcolepsy”, International Advanced Research Journal in Science, Engineering and Technology 2016 March;3(3):pp. 85-87.

[16] Er. Shipra Srivastava, Mohd Maroof Siddiqui, Saifur Rahman, Prof (Dr.) Syed Hasan Saeed, Md Belal Bin Heyat, “ Carbon Nano tubes & Its Application In Medical Field & Communication”, International Journal of Advanced Research in Computer and Communication Engineering 2016 May;5(5): pp.170-173.

[17] Md Belal Bin Heyat, Mohd Maroof Siddiqui, “Recording of EEG, ECG, EMG Signal”, International Journal of Advanced Research in Computer Science and Software Engineering 2015 October; 5(10): pp. 813-815.

Biographies



Mob No: 8604096046

Phone No: 0522-2419890

. ¹**Md Belal Bin Heyat** received the B.tech degree in E.I. from Integral University, Lucknow, UP, India in 2014. He is currently M.tech degree in electronics circuit & system, department of electronics and communication engineering from Integral University, Lucknow, Uttarpradesh, India in 2016. He has authored in no of International journals and conference. His research interests include electronics, communication engineering, instrumentation, therapy and biomedical engineering.

Address- s/o Md Sikandar Hayat Siddiqui, Director Unani Services UP, 541R/16/4, Rifa Colony, New Haidar Ganj, Campwell Road, Lucknow-226017 **Email Id:** belalheyat@gmail.com,

²**Shahabaz Ahmad Khan** is degree in E.I. from Integral University, Lucknow, Uttar pradesh, India in 2016. His research interests include therapy and Electronics.

³**Ahmad Zakariya** is degree E.I. from Integral University, Lucknow, Uttar pradesh, India in 2016. His research interests include information technology, therapy, Electronics and computer science engineering.



⁴**Faijan Akhtar** is degree in information technology engineering from Integral University, Lucknow, Uttar pradesh, India in 2016. His research interests include information technology, therapy and computer science engineering.



⁵**Shajan Azad** is pursuing from Hayat Institute, Lucknow, Uttar pradesh, India in 2016. His research interests computer science, medical.