
REAL-TIME INDUSTRIAL PROCESS CONTROLLING & MONITORING USING MOBILE

ABSTRACT

The project is aimed to design a real time industrial process monitoring and controlling system by using wireless communication technology GSM , using which the manual operations can be completely eliminated.

In industries, there will be various machinery to be operated on the basis of the status of other machinery. For this purpose, a person should be employed to monitor the status of loads. But there may be chances that the person may forget to operate. And also it is not an easy task for a person to operate manually as these machines run with high currents and high power consumption. This project gives the best solution for those situations and also the manual operation will be completely eliminated. This application will be developed by using a wireless concept. Here we consider, one of the wireless communication systems, that is GSM communication system as it is very cheap and very easy to implement.

A GSM modem provides the communication interface. It transports device protocols transparently over the network through a serial interface. A GSM modem is a wireless modem that works with a GSM wireless network. This GSM Modem can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. Advantage of using this modem will be that you can use its RS232 port to communicate and develop embedded applications. Applications like SMS Control, data transfer, remote control and logging can be developed easily. The modem can either be connected to PC serial port directly or to any microcontroller.

In this project, we will provide the automation for an industry by monitoring boiler temperature and boiler water level. This project is designed in such a way that we will interface a temperature sensor and three water level sensors to an 8 bit microcontroller. A GSM modem will be interfaced to the controller using serial communication. Three water level sensors will be arranged at 3 different levels of boiler and the temperature sensor will be interfaced to the

controller through an ADC to convert the analog value sensed into the digital value. . The microcontroller continuously monitors the output of the temperature and water level sensors. If any of the sensors triggers, the microcontroller can detect this and immediately sends the data or status of the sensors to the user mobile through GSM modem. Depending upon the received data the user can control the temperature and water level by sending predefined messages to modem to turn on the coolant fan for temperature controlling and pumping motor will be turn ON or OFF based on the water level of the boiler. A 16X2 LCD will be interfaced to the controller to display the status of the sensors.

This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

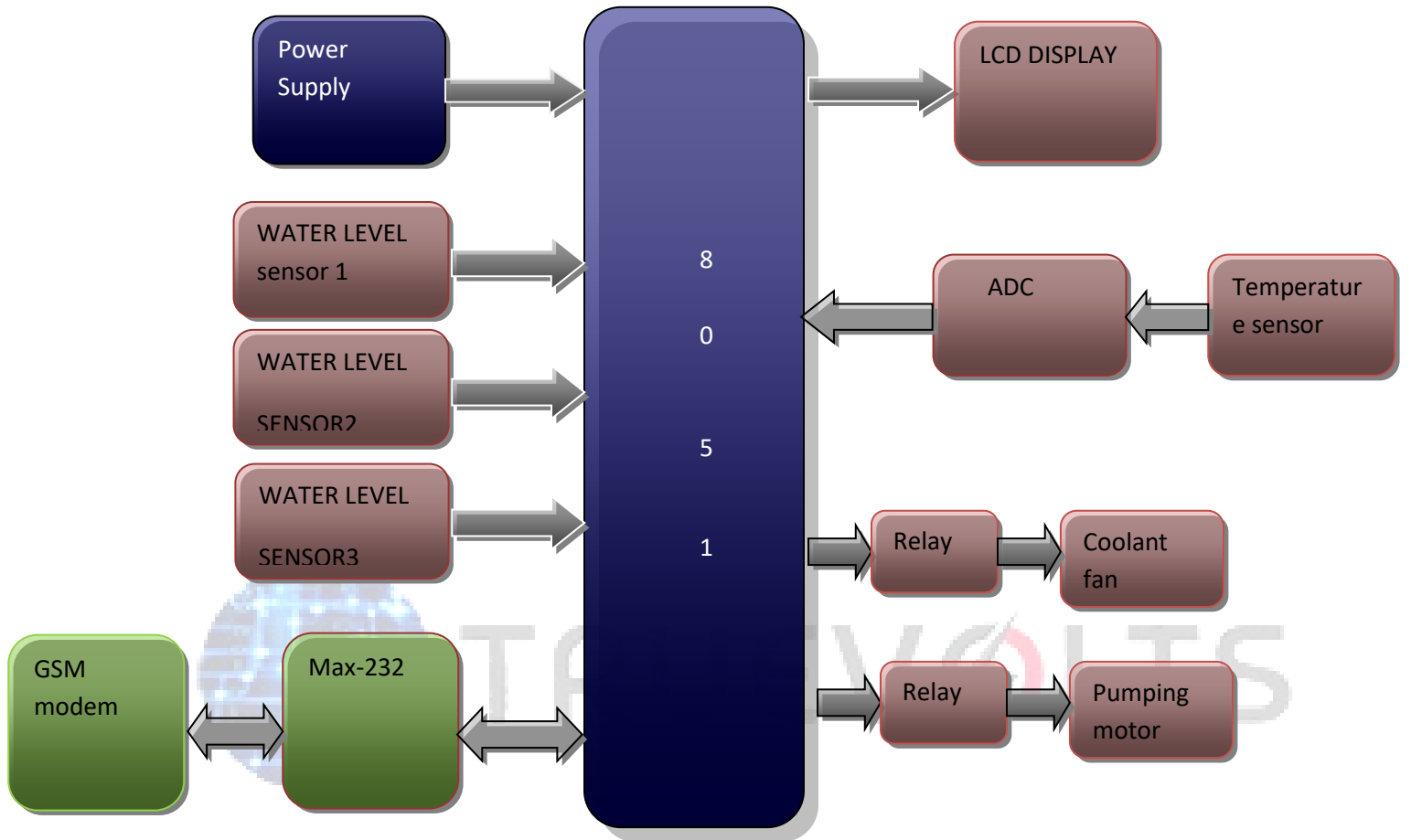


APPLICATIONS:

- Industrial applications
- Control systems

TRUEVOLTS

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:

