ABSTRACT

The aim of the project “INDUSTRIAL DATA ACQUISITION SYSTEM USING PC” is to design a system using which various physical parameters such as light, fire, humidity of an industry can be monitored through a PC using the microcontroller 8051.

This project is very useful in industries and is designed in such a way that the controller is interfaced to PC using serial communication technique. Serial communication is often used either to control or to receive data from an embedded microprocessor. In serial communication the data is sent as one bit at a time. Serial communication is a form of I/O in which the bits of a byte being transferred appear one after the other in a timed sequence on a single wire. Serial communication is commonly used in applications such as industrial automation systems, scientific analysis and certain consumer products. Here the communication is established between the PC and the controller by a line driver IC max232 which acts as a voltage converter. And the sensors such as IR sensor, humidity sensor, fire sensor and an LDR which detect the obstacle, humidity, fire and light respectively are interfaced to the controller through the operational amplifier IC LM358. So the controller continuously monitors the status of the sensors and sends the related data to the serial port. C# application always interact with serial port and continuously receives the updates from the sensors, according to that it gives the voice output through the speakers of the PC.

This project uses regulated 5V, 500mA power supply. 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
POWER SUPPLY BLOCK DIAGRAM:

Step down Transformer --> Bridge Rectifier --> Filter --> Regulator --> Output