ABSTRACT

For

Microcontroller based programmable Air quality and CO detection with LCD display & Alarm

PROJECT DEFINITION / SPECIFICATION

PROJECT TYPE

Microcontroller(PIC16F877A) hardware design with software development (Device Driver). PIC micro controller (PIC16F877A) based.

PROJECT DESCRIPTION
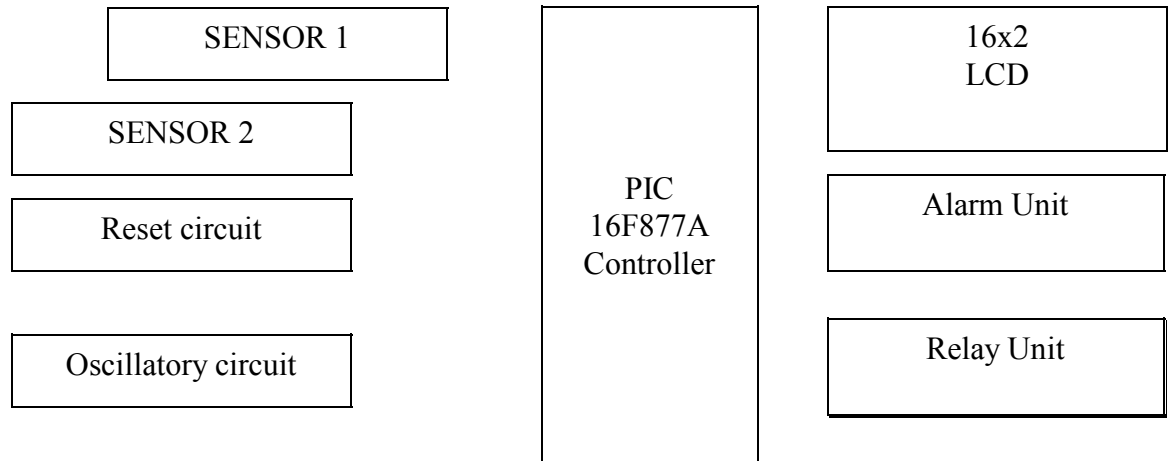
Air pollution in cities have shown that breathing dirty air cab be dangerous and at times death. Since then many nations have adopted ambient air quality standerda to safeguard the public against the moist common and damaging pollutants. Thease includes sulfur dioxide, suspended particulates matter, ground level ozone, nitrogen dioxide, carbon monoxide, and lead all of which are tied directly or indirectly to the combustion of fossile fules. Although substantial investments in pollution control in some industrialized country have lowered the levels of these pollutants in many cities, poor air quality is still a major concern throughout the industrialized world. Carbon monoxide is a gas that can build upto a dangerous level indoors when fuel-burning devices are not properly operated , vented or maintained because it has no odor, no taste, no color, no taste CO cannot be detected by smell, taste or sight. Co is poisoning due to residential fuel burning devices kills about 200 to 250. In this system an air quality sensor is being used to detect multiple toxic gas in pour environment. The semiconductor types gas sensor have excellent sensitivity to various smells generated in normal living environment such as nicotine, hydrogen sulphide, ammonia, trimethylamine, scatol, acetic acid, toluene, methylmelcaptan, acetoaldehyde, formaldehyde, acetone,carbon monoxide etc.

BLOCK DIAGRAM

SENSOR 1		16x2 LCD
SENSOR 2	PIC 16F877A Controller	Alarm Unit
Reset circuit		Relay Unit
Oscillatory circuit		

PROJECT OUTLINE

- A brief introduction to internal architecture of microcontroller.
- An over view of programming of microcontroller.
- An overview on C language.
- An overview on mechanical arrangement.
- Air & CO sensors interfacing with microcontroller.

INTERFACES USED

- Serial communication used for downloading the hex code.
- Sensor circuit interface.
- LCD interfacing
- Relay interfacing.

SOFTWARES USED

- A Cross compiler for compiling and linking the code written for PIC16F877A.
- Serial communication software for downloading code to PIC16F877A.
- Operating system: Windows XP.