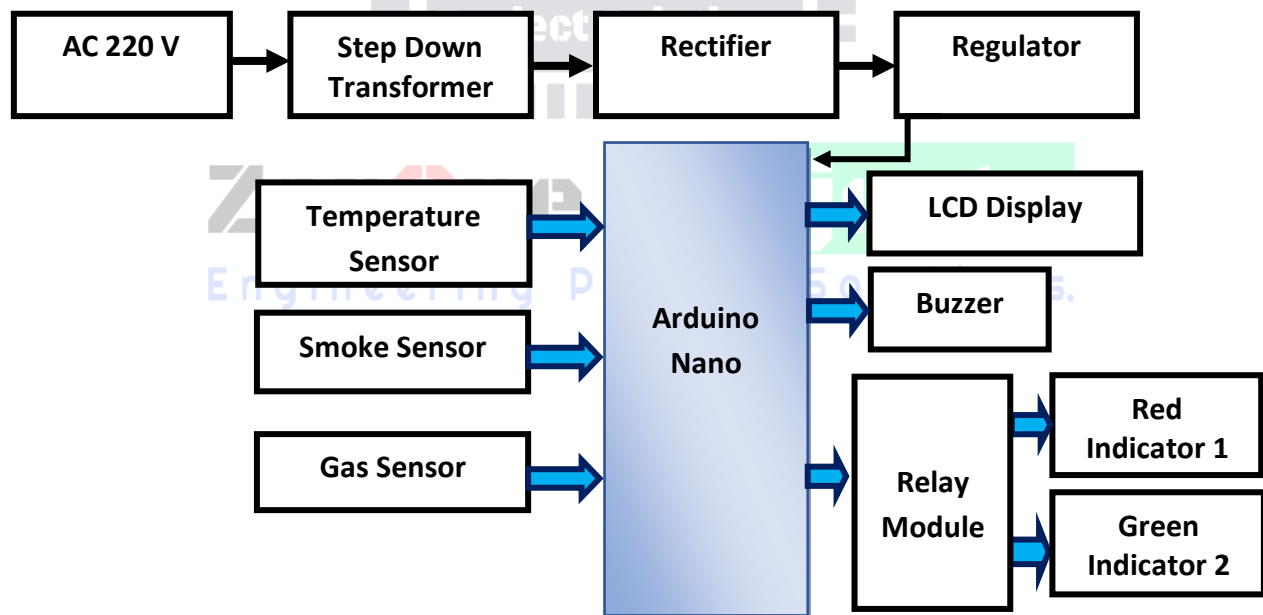


## Industrial Fault Detection System.

### About This Project:

In This project is to develop an Industrial Fault Detection System. Arduino Based Industrial fault detection system sends the signal from different sensors, Such as Smoke, Temperature and LPG gas sensor to the micro-controller – Arduino. The micro-controller then sends this data to Output Indicator. In case a fire takes place, the smoke sensor and the temperature sensor would detect the presence of smoke and temperature changes and send the information to the Arduino. The micro-controller is connected to the relay module, buzzer and LCD Display. Arduino is programmed to turn ON the buzzer when the temperature sensor detects temperature greater than a threshold value. This value can be programmed as needed. When the threshold value is reached, the buzzer would be turned ON. At the same time, the LCD would display informative messages. As soon as the buzzer is turned ON. LPG sensor is used for LPG gas leakage detection. In case there is a leakage of gas, the sensor would detect it and send the signal to the Arduino, which would turn ON the buzzer and Indicator. The power supply setup of the system contains a step down transformer of 230/12V, used to step down the voltage to 12VAC. To convert it to DC, a bridge rectifier is used. In order to remove the ripples, a capacitive filter is used and it makes use of 7805 voltage regulator to regulate it to +5V that will be needed for microcontroller and other components operation.

### Block Diagram:



**Figure: Block Diagram of Industrial Fault Detection System.**

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### Required Instrument:

- Arduino.
- Temperature Sensor.
- Smoke/Fire Sensor.
- Gas Sensor.
- Relay.
- LCD Display.
- Buzzer.
- Transistor.
- Transformer.
- Diode.
- Capacitor.
- Voltage Regulator.

### Advantages:

- One of the main advantages of Arduino based Industrial fault detection system is that it does not require any human intervention once the system is installed.
- This project could help in saving lives if appropriate measures are taken in time.
- Apart from the industries mentioned above, Arduino based Industrial fault detection project can be used in other manufacturing units, offices, schools etc.
- It is easy to install and maintenance cost is low.
- It can effectively detect temperature, humidity, Smoke, Fire & Gas.
- It is cost effective and consumes low power.
- It is very compact and uses a few components only.

### Applications:

- This System can be used to any industries for the safety purpose.

**N.B:** *Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.*

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