**TEMPARATURE MONITORING AT A BOILER**

**DESCRIPTION:**

Temperature monitoring is vital in many industrial processes. Accurate control of temperature is essential nearly in all chemical processes. In some applications, an accuracy of around 5-10ºC may be acceptable. There are also some industrial applications which require better than ±1ºC accuracy. Temperature is measured using temperature sensors. These sensors come in many different forms and a number of techniques have evolved for the measurement of temperature. There are new forms of sensors that require no contacts with the medium whose temperature is to be sensed. The majority of sensors still require touching the solid, liquid, or the gas whose temperature is to be measured.

In this project we implemented the design of temperature monitoring at boilers. The temperature is monitored using temperature sensor (LM35) which is interfaced to the microcontroller through ADC (Analog to Digital Converter). The microcontroller continuously monitors the temperature. If the temperature value exceeds the set value, a coolant is switched ON. A LCD is interfaced to the controller to set the value.

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

# TECHNICAL SPECIFICATIONS:

**HARDWARE:**

Micro controller : AT89x series

Crystal : 11.0592 MHz

DC fan

ADC0804

LM35

Relay

16X2 LCD

**POWER SUPPLY**

Transformer : 12V step down

Filter : 1000uf/25V

Voltage Regulator : 7805, 7812

**SOFTWARE:**

Keil IDE

UC flash

Proteus

**APPLICATIONS:**

* Industrial applications
* Domestic applications

**BLOCK DIAGRAM:**

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LCD

Power Supply

Relay

ADC0804

Coolant fan

LM35

**POWER SUPPLY BLOCKDIAGRAM:**

Step down Transformer

Filter

Regulator

Output

Bridge Rectifier