

INDUSTRIAL PARAMETER MONITORING AND CONTROLLING

DESCRIPTION:

The aim of the project is to monitor and control the weather in industries by using temperature sensor and level indicator. Use of embedded technology makes this closed loop feedback control system efficient and reliable. Micro controller (AT89C51) allows dynamic and faster control. It is very compact using few components and can be implemented for several applications including air-conditioners, water-heaters, snow melters, ovens, heat-exchangers, mixers, furnaces, incubators, thermal baths and veterinary operating tables. AT89C51 micro controller is the heart of the circuit as it controls all the functions.

The project will be designed in such a way that the controller will be interfaced to the temperature sensor through an analog to digital converter IC ADC0804 to convert the analog values into digital, as well as to the level indicator. The temperature sensor LM35 senses the temperature and converts it into an electrical signal, which is applied to the micro controller through ADC. The analog signal is converted into digital format by the analog-to-digital converter (ADC). The sensed and set values of the temperature are displayed on the 16x2-line LCD. The micro controller turn ON a coolant fan to control the heating element with the help of an electromagnetic relay.

This project also contain a fluid level sensor which senses the level of the fluid and send the data to the micro controller. The status of the system is displayed on an LCD.

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. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Micro controller	:	AT89S52
Crystal	:	11.0592 MHz
ADC	:	ADC0804
LCD	:	HD44780
LED	:	5mm Red LED

Temperature sensor : LM35

Level indicator

Relays

Coolant fan

DC motor

Power supply

Transformer : 12V step down

Filter : 1000uf/25V

Voltage Regulator : 7805

SOFTWARE:

Keil micro vision

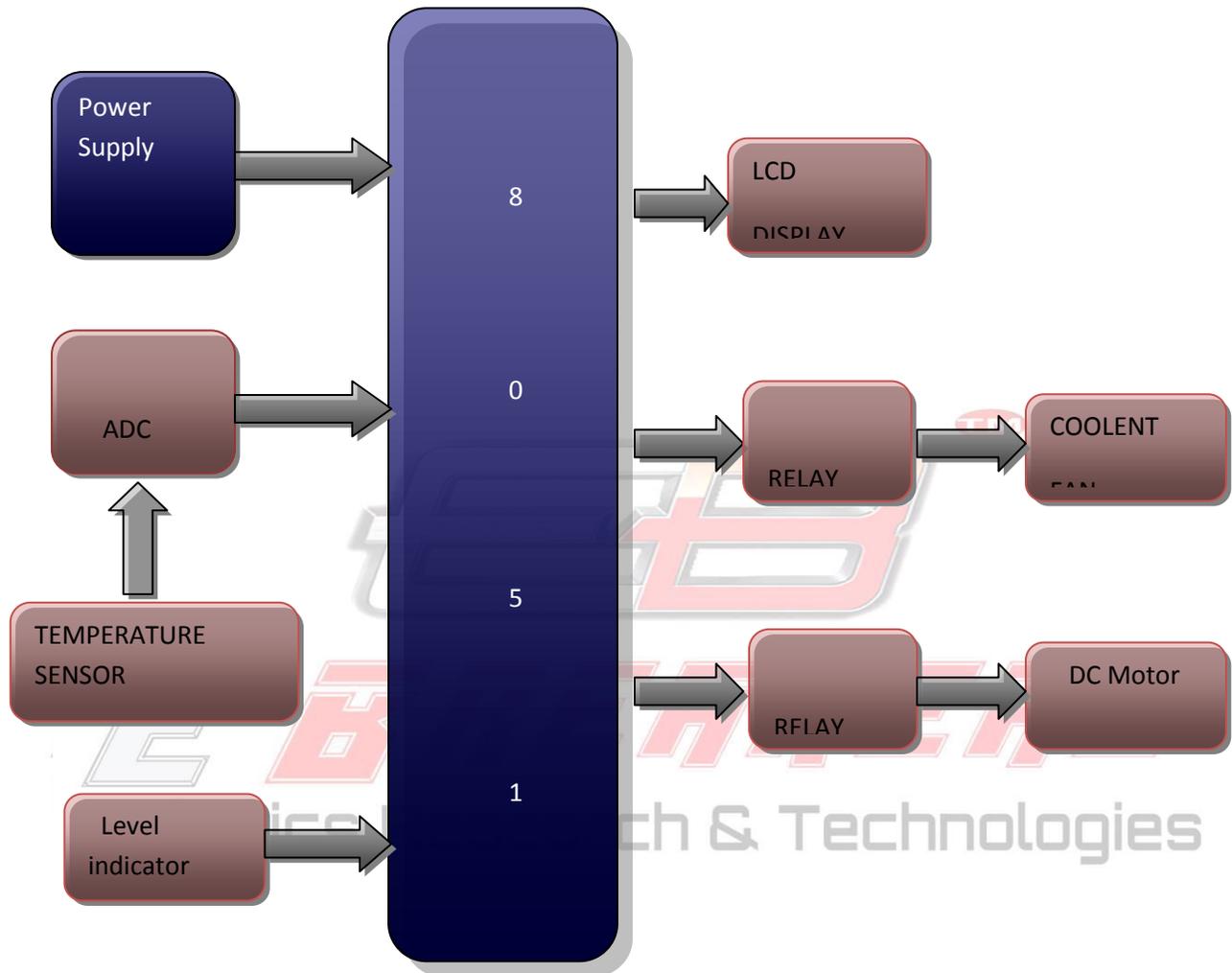
Proteus

UC flash

APPLICATIONS:

- Industrial applications
- Automatic control systems

BLOCK DIAGRAM:



POWER SUPPLY BLOCK DIAGRAM:

