

High Voltage Fuse Blown Indicator with voice alert

The purpose of this project is to alert the user in case of a fuse in a critical electrical equipment got fused.

This consists of two electrically isolated power sensors for sensing the presence of electrical power. One of the power sensors is connected before the fuse to be monitored and the other after the fuse. The power status from these sensors is fed to a microcontroller. Microcontroller continuously monitors the status of these two sensors. If the power status of second sensor is low and the first sensor is high, then the microcontroller identifies this as a break in fuse circuit and gives an appropriate message. If both the sensors output goes low then microcontroller identifies this as power supply failure and gives an appropriate message.

The message to be announced is provided to the controller as a package in an IC. This IC is capable of recording few messages and plays them if operated in the playback mode. The controller is interfaced with this IC with proper precautions. The code inside the controller decides the appropriate message depending upon the situation.

The objectives of the project include:

1. Real-time fuse monitoring.
2. Alarming in fuse blown situations.
3. Producing a voice announcement with the corresponding situations.

The project provides us exposure on:

1. Embedded C program.
2. PCB designing.
3. Electrical isolation between two devices.

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4. Voice based IC characteristics.
5. Circuit design of voice based IC
6. IC interfacing.

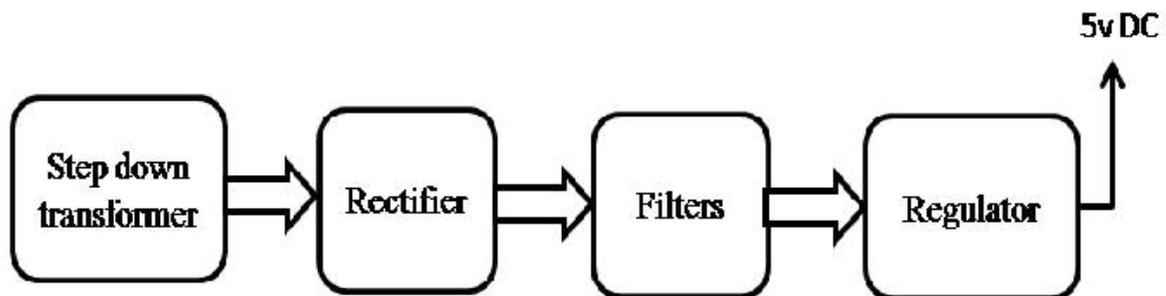
The major building blocks of this project are:

1. Microcontroller based control system with regulated power supply.
2. Two electrically isolated power status sensors.
3. Microcontroller to PC interfacing circuit.
4. Voice based IC.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Microcontroller.

Regulated power supply:



Block Diagram:

High voltage fuse blown indicator with voice based announcement system

