

Optically isolated Fuse blown indicator with sound and light indicator

Title of the project	:	Optically isolated Fuse blown indicator with sound and light indicator
Domain	:	Embedded Systems Design
Power Supply	:	+5V, 500mA Regulated Power Supply
Display	:	LED 5mm
Siren	:	60dB
Buzzer	:	1
Communication	:	RF Transmitter STT-433 MHz RF Receiver STR-433 MHz
Sensor	:	Reed Switch / Magnetic sensors
Applications	:	Spinning Mills, Cotton Process Industries
Developed By	:	M/S Wine Yard Technologies
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Wireless Petroleum Level Sensor using RF Communication

ABSTRACT:

Generally, when equipment indicates no power, the cause may be just a blown fuse. Here is a circuit that shows the condition of fuse through LEDs. This compact circuit is very useful and reliable. It uses very few components, which makes it inexpensive too.

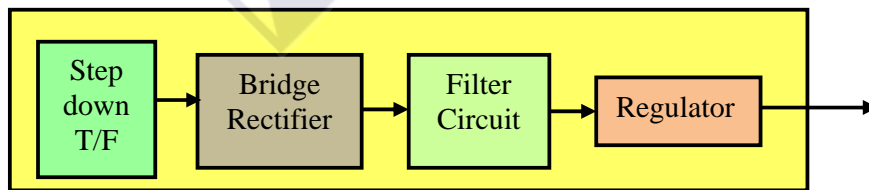
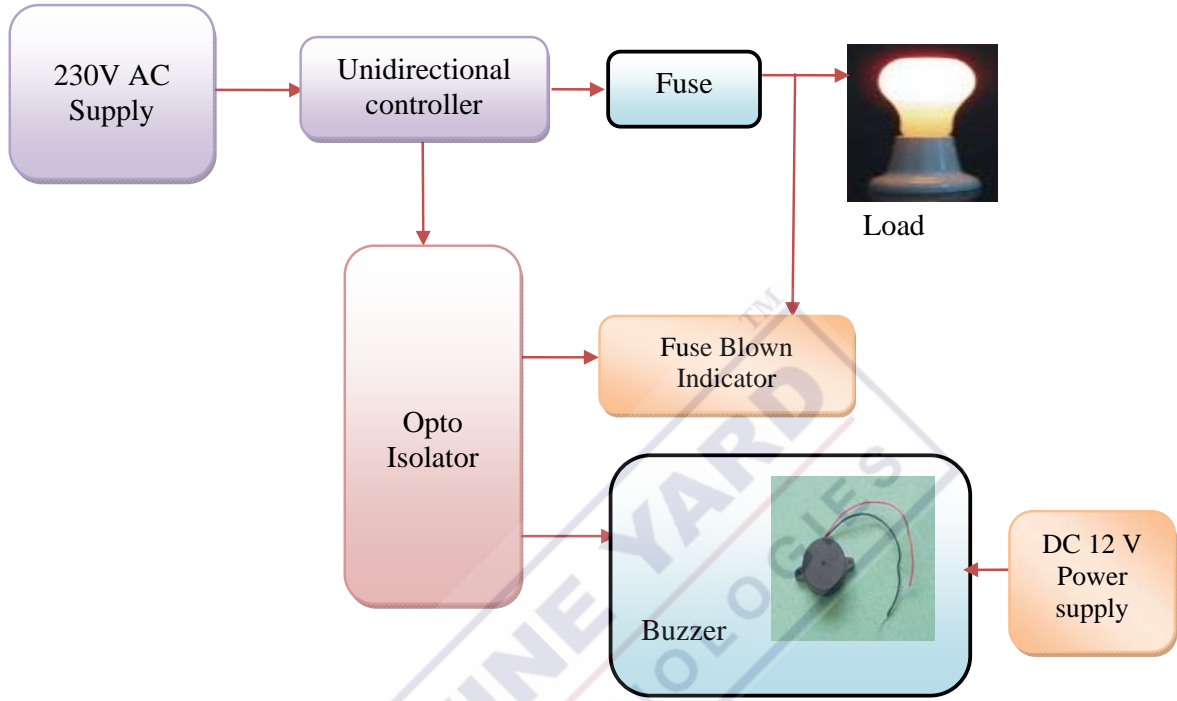
Under normal conditions (when fuse is alright), voltage drop in first arm is $2V + (2 \times 0.7V) = 3.4V$, whereas in second arm it is only $2V$. So current flows through the second arm, i.e. through the green LED, causing it to glow; whereas the red LED remains off.

When the fuse blows off, the supply to green LED gets blocked, and because only one LED is in the circuit, the red LED glows. In case of power failure, both LEDs remain 'off'.

This circuit can be easily modified to produce a siren in fuse-blown condition. An optocoupler is used to trigger the siren. When the fuse blows, red LED glows. Simultaneously it switches 'on' the siren.

In place of a bicolor LED, two LEDs of red and green colour can be used. Similarly, only one diode in place of D1 and D2 may be used. Two diodes are used to increase the voltage drop, since the two LEDs may produce different voltage drops.

Block Diagram:



Advantages:

- Magnetic Sensors
- Free from fluoride and oxidization
- Buzzer indication on abnormal temperature

Scopes for Advancements:

- Reliability of liquid level can be increased by increasing number of sensors.

Applications:

- Spinning mills
- Cotton process industries
- Petrochemical industries
- Liquid level sensing units

Abstracts Prepared by



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