

KNOWLEDGE INSTITUTE OF TECHNOLOGY

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MAKE A PRODUCT (MAP)

FIRE DETECTON USING THERMAL RESISTOR

ABSTRACT:

A Fire detector is a sensor designed to detect and respond to the presence of a flame or fire, allowing flame detection. Responses to a detected fire depend on the installation, but can include sounding an alarm, deactivating a fuel line (such as a propane or a natural gas line), and activating a fire suppression system. When used in applications such as industrial furnaces, their role is to provide confirmation that the furnace is working properly; in these cases they take no direct action beyond notifying the operator or control system. This fire can be controlled with the help of Foam Components.

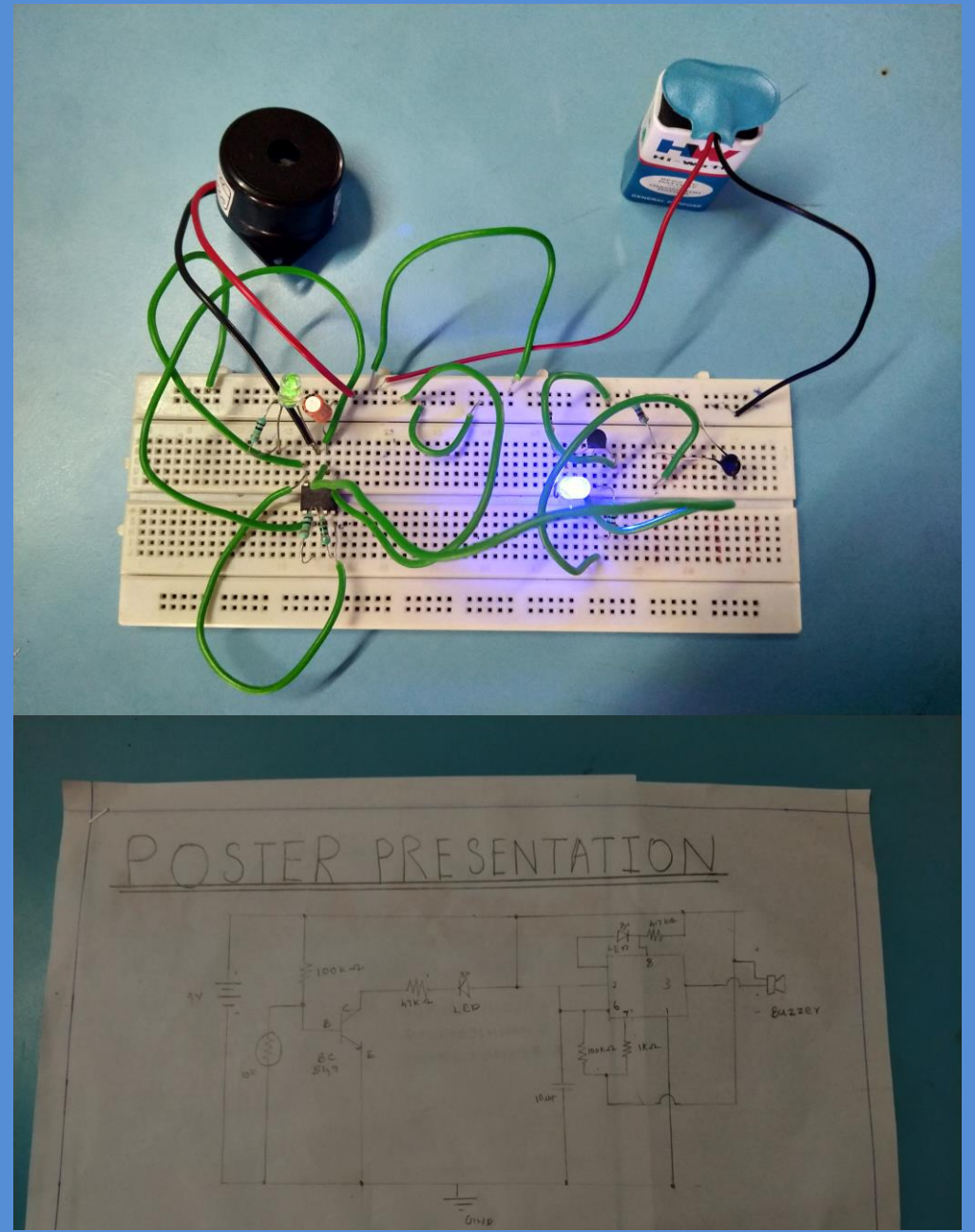
INTRODUCTION:

Fire alarm systems (also commonly called smoke alarm and a smoke detector) provide a means to detect and identify a fire or a potential fire outbreak in a building, warn the occupants of the building about the fire via audible alarm and potentially notify emergency response professionals. The main components of a fire alarm system are typically the smoke detectors (and other detectors like heat, gas detectors), manual call points (also called 'break glass') which enable a person who physically detects fire to raise the alarm, bell or alarm sounders, flashers, and control panel (central control and indicating equipment) which is the brain of the system. Some advantages of fire alarms include an early warning benefit and the potential to save life and property, low cost and the opportunity to place the device in chosen locations. It is a key recommendation in any fire prevention plan.

METHODOLOGY / DESCRIPTION:

- ❖ First, the fire is detected by the thermistor.
- ❖ Then the Collector current is stopped by the increase in the Thermistor.
- ❖ Then this result in converting the ON signal in IC555 into OFF signal which results in the buzzer alarm.
- ❖ Then after the activation of buzzer it results in producing Foam around the region of fire which results the stoppage of fire.
- ❖ Then the Detector stops the expansion of resistance after the fire gets stopped by the Foam produced by the fire controller.

BLOCK DIAGRAM / CIRCUIT DIAGRAM:



CONCLUSION:

Thus after sensing the Fire/Flame, the thermistor reacts by producing a large resistance which the thermal runaway produced by the BJT, which in turn results in producing No current to the IC555 timer. Then the clock signal turns to zero which in turn OFF's the LED and results in ON of Buzzer Mode. Then this results in activation of Foam in that region.

ACHIEVEMENTS:

The team has presented this in Make a Product Expo conducted by Knowledge Institute of Technology.



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