Description:

A flame detector is a sensor designed to detect and respond to the presence of a flame or fire, allowing flame detection. Responses to a detected flame 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; it can be used to turn off the ignition system though in many cases they take no direct action beyond notifying the operator or control system. A flame detector can often respond faster and more accurately than a smoke or heat detector due to the mechanisms it uses to detect the flame.

The LM393 series are dual independent precision voltage comparators capable of single or split supply operation. These devices are designed to permit a common mode range-to-ground level with the single-supply operation. Input offset voltage specifications as low as 2.0 mV makes this device an excellent selection for many applications in consumer, automotive, and industrial electronics.

Note: The power supply must not be reversed, otherwise it is possible to damage the chip.

Features:

1. It can detect flame or wavelength in the range of 760 nm ~ 1100 nm light source, lighter test flame distance is 80cm, the greater the flame, the farther the test distance.
2. The detection angle 60 degrees or so, especially sensitive to the flame spectrum.
3. Sensitivity adjustable (blue digital potentiometer adjustment in the figure).
4. Comparator output, signal clean, good waveform, strong driving ability, more than 15mA.
5. With adjustable precision potentiometer Adjusting sensitivity.
6. Working voltage 3.3~5V.
7. Output form: digital switch output (0 and 1).
8. With fixed bolt holes for easy installation.
9. Small board PCB size: 3.2cm x 1.4cm.
10. Wide use Operating Instructions for Voltage LM393 Comparator.

Wiring Instructions:

1. VCC is connected to the positive pole of the power supply 3.3-5V
2. GND is connected to the negative power supply
3. DO TTL switch signal output

Applications:

Various flames, fire source detection