Arduino Modules - Flame Sensor

by **Reichenstein7** on August 24, 2014

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Intro: Arduino Modules - Flame Sensor

Quick and simple start guide for using and exploring the Flame Sensor module with an Arduino.

The model in the example I am using is from Deal Extreme [DX] and can be found HERE.

Materials needed:

- Flame Sensor (model with an analog out)
- Male to Female jumper wires
- An Arduino, any flavor.
- Lighter or another flame source for testing.
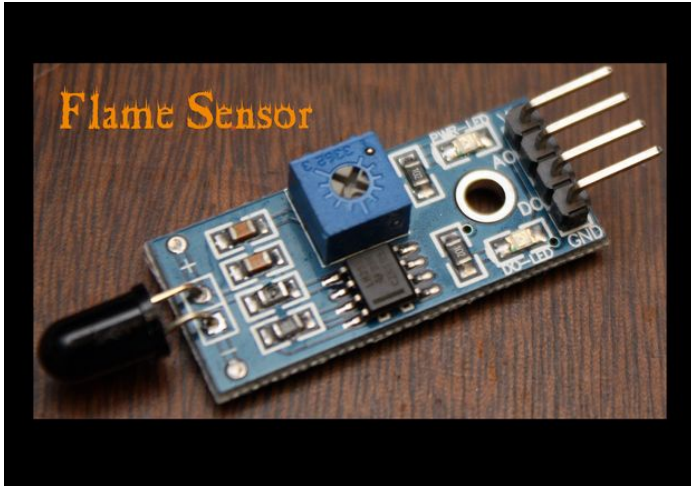
Step 1: Getting to know your Flame Sensor:

Usage:

These types of sensors are used for short range fire detection and can be used to monitor projects or as a safety precaution to cut devices off / on.

Range:

I have found this unit is mostly accurate up to about 3 feet.

How it works:

The flame sensor is very sensitive to IR wavelength at 760 nm ~ 1100 nm light.

Analog output (A0): Real-time output voltage signal on the thermal resistance.

Digital output (D0): When the temperature reaches a certain threshold, the output high and low signal threshold adjustable via potentiometer.

Pins:

VCC...... Positive voltage input: 5v for analog 3.3v for Digital.

A0.......... Analog output
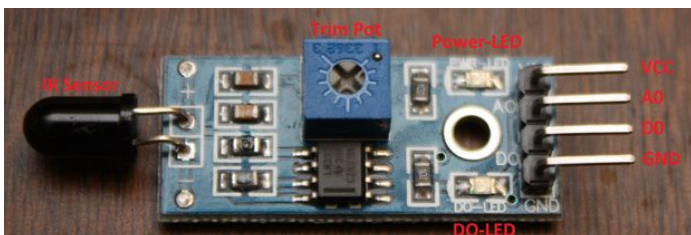
D0......... Digital output

GND..... Ground

Dimensions:

1.18 in x 0.59 in x 0.20 in (3.0 cm x 1.5 cm x 0.5 cm)

Weight:

0.28 oz (8 g)

Step 2: Testing and Troubleshooting:

Testing:

To test the Flame Sensor and ensure that it is working correctly connect the VCC to a 5v power source and GND. Move a flame source with in a foot of the front of the Ir sensor and the D0-LED should light up.

Troubleshooting:

If the D0-LED does not light up check the following:

- Is the power source 5v?
- Is the ground hooked up?
- Is the flame with in 1 foot and in Line of Sight?

If none of the previous makes the D0-LED light up, your sensor may be defective.
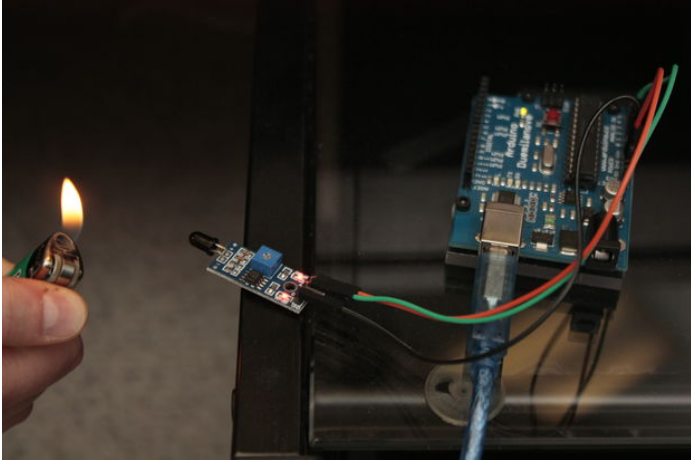
Step 3: Wiring to an Arduino:

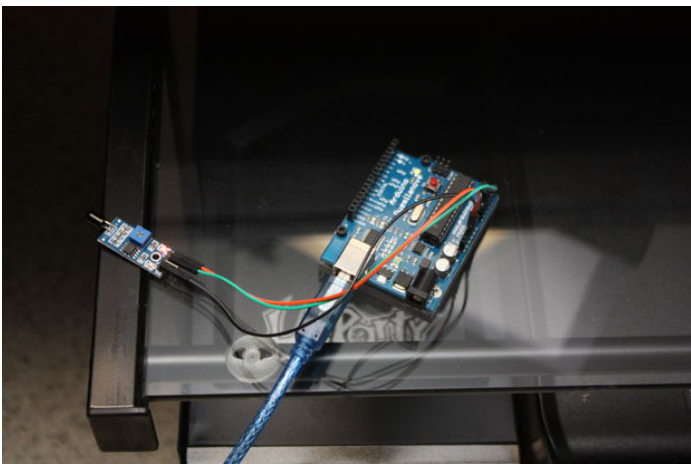To wire the Flame Sensor to the Arduino simply connect the following as shown:

Flame sensor .... Arduino

VCC............................... 5v

GND...............................GND

A0.................................. Analog in 0

Step 4: Arduino code:

The following code maps and reads the analog values given by the flame sensor (0-1024). The stock flame sensor will have the following reaction with this code:

- If holding a flame within 1.5 feet in front of the sensor; "case 0" will be activated and " ** Close Fire ** " will be sent to the serial monitor.
- If holding a flame between 1.5 feet and 3 feet in front of the sensor; "case 1" will be activated and " **Distant Fire** " will be sent to the serial monitor.
- If no flame is detected in front of the sensor; "case 2" will be activated and " No Fire " will be sent to the serial monitor.

* To view the output, point a serial monitor such as Putty at your Arduino.

* This code is constantly updating in order to provide a real time feedback of the flame sensor.

Code:

Attached due to formatting.

File Downloads

Flame_Sensor_Example_Reichenstein7.ino (1 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'Flame_Sensor_Example_Reichenstein7.ino']

Related Instructables

Autonomous Fire Fighter Robot by nishad111

Arduino Web Server with sensors by vktomi

Interfacing a Wind Sensor to LEDs by jennasykes

(w/ Video) Basic Arduino Robot, Light Seeker! by Chowmix12

Arduino Fading Light (Photos) by origamiAirControl

Light activated LED (video) by arduino 123

Comments

2 comments **Add Comment**

MsSweetSatisfaction says: Aug 24, 2014. 1:43 PM **REPLY**
Neat project concept, and good job explaining the complex parts. Thanks for sharing!

Reichenstein7 says: Aug 24, 2014. 1:54 PM **REPLY**
Thank you. =)