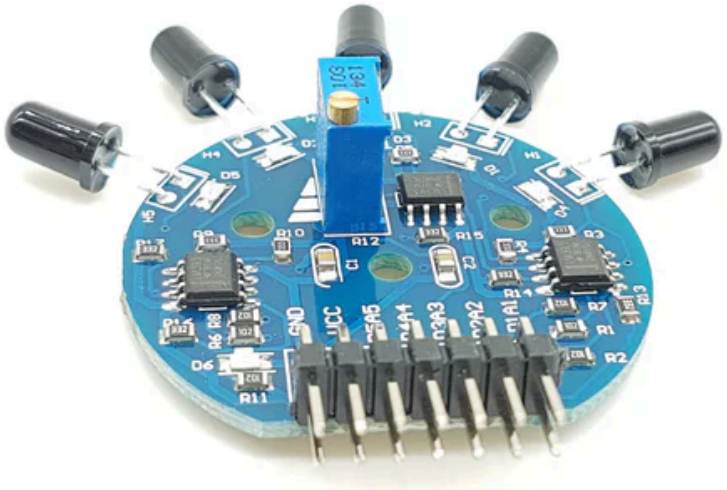
Flame-M Five-Channel Flame Detection Module



Product Features:

- Designed with five flame sensors, providing a wide detection range (greater than 120°).
- Capable of outputting digital signals (high and low levels), making it easy to use.
- Capable of outputting analog signals (voltage signals), allowing for more precise measurement, suitable for high-precision applications.
- All five outputs have status indicators, making it extremely convenient for both debugging and practical use.
- The detection distance for digital output and the sensitivity for analog output are adjustable, offering more flexible design.
- Designed with 1% resistors, providing more accurate signal output, suitable for high-precision measurement requirements.
- Equipped with three onboard M3 mounting holes for easy installation.
- Powered by 3.3V-9V, compatible with most microcontroller systems.
- All SMD components are soldered using SMT automated processes, ensuring military-grade quality and reliability.

Module Principles

This product can detect the shortwave near-infrared (SW-NIR) wavelength range emitted by flames, which spans from 700 nm to 1100 nm. The detection is output as an electrical signal (voltage signal).

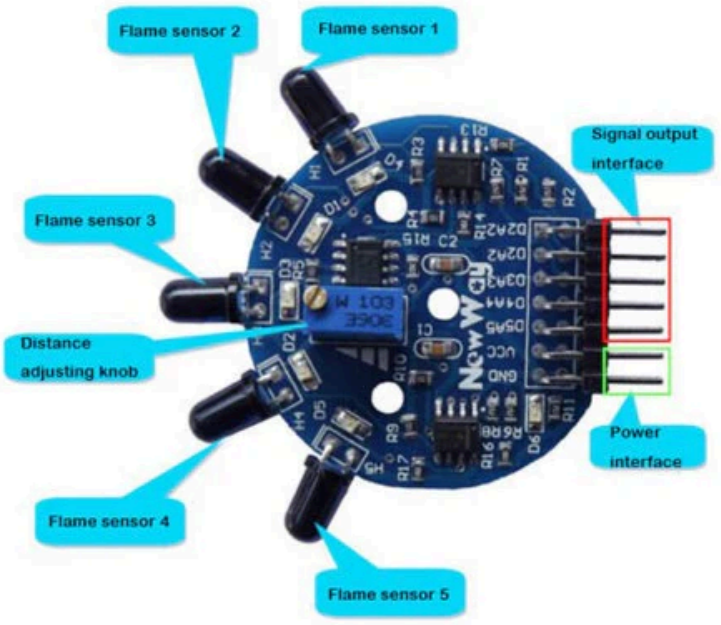
Pin Configuration

Signal output ports (from top to bottom):

- **A1 (labeled as A2 on the module):** First flame sensor analog signal output port, the output voltage increases with the flame intensity.
- **D1 (labeled as D2 on the module):** First flame sensor digital signal output port, high level indicates flame presence (indicator light on), low level indicates no flame (indicator light off).
- **A2:** Second flame sensor analog signal output port, the output voltage increases with the flame intensity.
- **D2:** Second flame sensor digital signal output port, high level indicates flame presence (indicator light on), low level indicates no flame (indicator light off).
- **A3:** Third flame sensor analog signal output port, the output voltage increases with the flame intensity.
- **D3:** Third flame sensor digital signal output port, high level indicates flame presence (indicator light on), low level indicates no flame (indicator light off).
- **A4:** Fourth flame sensor analog signal output port, the output voltage increases with the flame intensity.
- **D4:** Fourth flame sensor digital signal output port, high level indicates flame presence (indicator light on), low level indicates no flame (indicator light off).
- **A5:** Fifth flame sensor analog signal output port, the output voltage increases with the flame intensity.
- **D5:** Fifth flame sensor digital signal output port, high level indicates flame presence (indicator light on), low level indicates no flame (indicator light off).

Power supply interface (connected horizontally, any one can be used):

- **VCC:** Module power positive input port, input range 3.3V-9V (relative to GND).
- **GND:** Module power negative input port.



Distance Adjustment Knob:

- **For Analog Output:** Rotate counterclockwise (towards the marked increase), sensitivity increases, meaning a very small input can produce a high voltage output.
- **For Digital Output:** Rotate counterclockwise (towards the marked increase), detection range increases, allowing digital output from a greater distance.

Notes on the Distance Adjustment Knob:

- The five channels share a single adjustment knob.

Technical Specifications

- **Detection Wavelength:** 700—1100 nm
- **Detection Distance:** Greater than 1.5m
- **Supply Voltage:** 3V-9V

Precautions

- Sunlight has some impact on it, so avoid using it in direct sunlight. To reduce interference, you can add heat shrink tubing to the sensor end.