

lamaPLC: MicroPython Flame Sensor Modul

This MicroPython code reads the infrared analogue signal from an IR module (ignoring the DI signal), and outputs the converted analogue value read, as well as generating its own digital signal ("FLAME DETECTED! ☐") based on the captured threshold value (FLAME_THRESHOLD).

The sample program is written for the [LM393 \(KY-026\) Flame Sensor Module](#).

```
import machine
import time

# Configure ADC0 on GPIO26
flame_sensor = machine.ADC(26)

# Calibration threshold (0-65535)
# Most analog flame sensors output a LOWER voltage when a flame is detected.
# Adjust this value based on your ambient light conditions.
FLAME_THRESHOLD = 50000

print("Starting Flame Sensor Monitoring...")

while True:
    # Read the 16-bit analog value (range: 0 to 65535)
    raw_value = flame_sensor.read_u16()

    # Calculate the corresponding voltage (based on 3.3V reference)
    voltage = (raw_value * 3.3) / 65535

    # Evaluate the sensor readings
    # Typical flame sensors pull the analog output LOW in the presence of
    # fire.
    if raw_value < FLAME_THRESHOLD:
        status = "FLAME DETECTED! ☐"
    else:
        status = "Safe / No Flame"

    # Print results to the serial console
    print(f"ADC Value: {raw_value:5d} | Voltage: {voltage:.2f}V | Status:
    {status}")

    # Wait 200 milliseconds before the next sample
    time.sleep(1)
```

Output example

```
ADC Value: 62495 | Voltage: 3.15V | Status: Safe / No Flame
ADC Value: 2880 | Voltage: 0.15V | Status: FLAME DETECTED! ☐
```

ADC Value: 63231	Voltage: 3.18V	Status: Safe / No Flame
ADC Value: 62815	Voltage: 3.16V	Status: Safe / No Flame
ADC Value: 2624	Voltage: 0.13V	Status: FLAME DETECTED! <input type="checkbox"/>
ADC Value: 2528	Voltage: 0.13V	Status: FLAME DETECTED! <input type="checkbox"/>
ADC Value: 2912	Voltage: 0.15V	Status: FLAME DETECTED! <input type="checkbox"/>
ADC Value: 3760	Voltage: 0.19V	Status: FLAME DETECTED! <input type="checkbox"/>
ADC Value: 63247	Voltage: 3.18V	Status: Safe / No Flame
ADC Value: 63279	Voltage: 3.19V	Status: Safe / No Flame

[code!](#), [micropython](#), [2026](#), [RP2040 ETH](#), [LM393](#), [flame](#), [flame sensor](#)

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Last update: **2026/05/14 11:28**

