# Analog Temperature Sensor

DESCRIPTION:

A thermistor is a type of resistor whose resistance is dependent on temperature, more so than in standard resistors. The word is a portmanteau of thermal and resistor. Thermistors are widely used as inrush current limiter, temperature sensors (NTC type typically), self-resetting overcurrent protectors, and self-regulating heating elements.
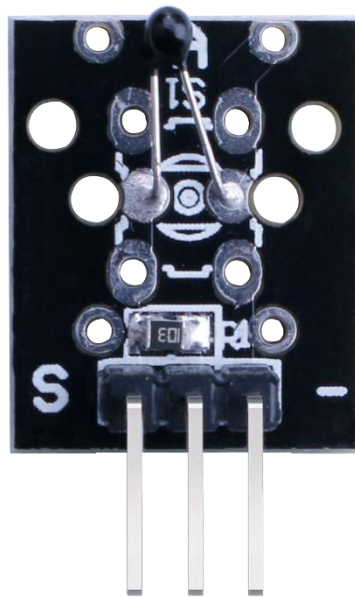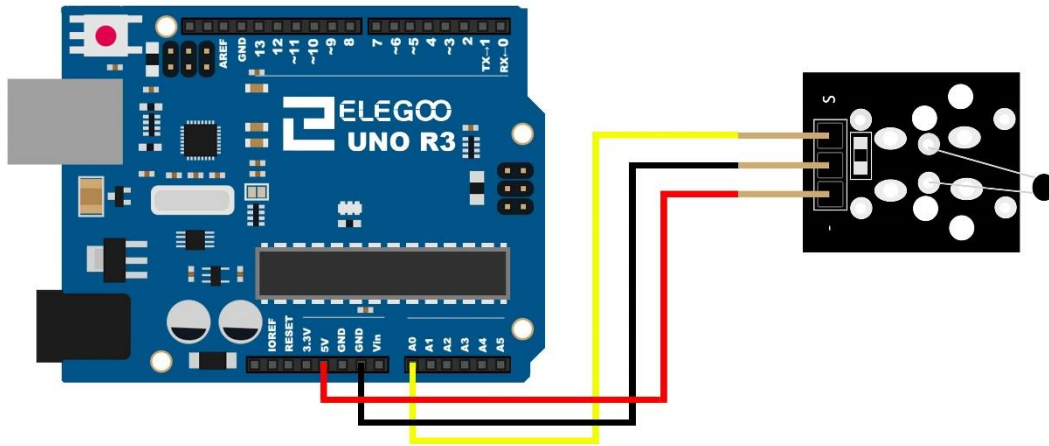

Specification：

- Model No: NTC-MF52 3950

- 3Pin

- Temperature Range : ~55℃~+125℃

- Accuracy :+/-0.5℃

- Pull-up resistor : 10KΩ

PIN CONFIGURATION:

1、   "S": Singal pin

2、   "+" : +5V

3、   "-" :GND

Example:

This is a simple code for the NTC thermistor module, Wire as below:

Code:

```
byte NTCPin = A0;

#define SERIESRESISTOR 10000

#define NOMINAL_RESISTANCE 10000

#define NOMINAL_TEMPERATURE 25

#define BCOEFFICIENT 3950


void setup()
{
Serial.begin(9600);
}
void loop()
{
float ADCvalue;
float Resistance;
ADCvalue = analogRead(NTCPin);
Serial.print("Analoge ");
```

```
Serial.print(ADCvalue);

Serial.print(" = ");

//convert value to resistance

Resistance = (1023 / ADCvalue) - 1;

Resistance = SERIESRESISTOR / Resistance;

Serial.print(Resistance);

Serial.println(" Ohm");


float steinhart;

steinhart = Resistance / NOMINAL_RESISTANCE; // (R/Ro)

steinhart = log(steinhart); // ln(R/Ro)

steinhart /= BCOEFFICIENT; // 1/B * ln(R/Ro)

steinhart += 1.0 / (NOMINAL_TEMPERATURE + 273.15); // + (1/To)

steinhart = 1.0 / steinhart; // Invert

steinhart -= 273.15; // convert to C


Serial.print(steinhart);

Serial.println(" oC");

delay(1000);

}
```