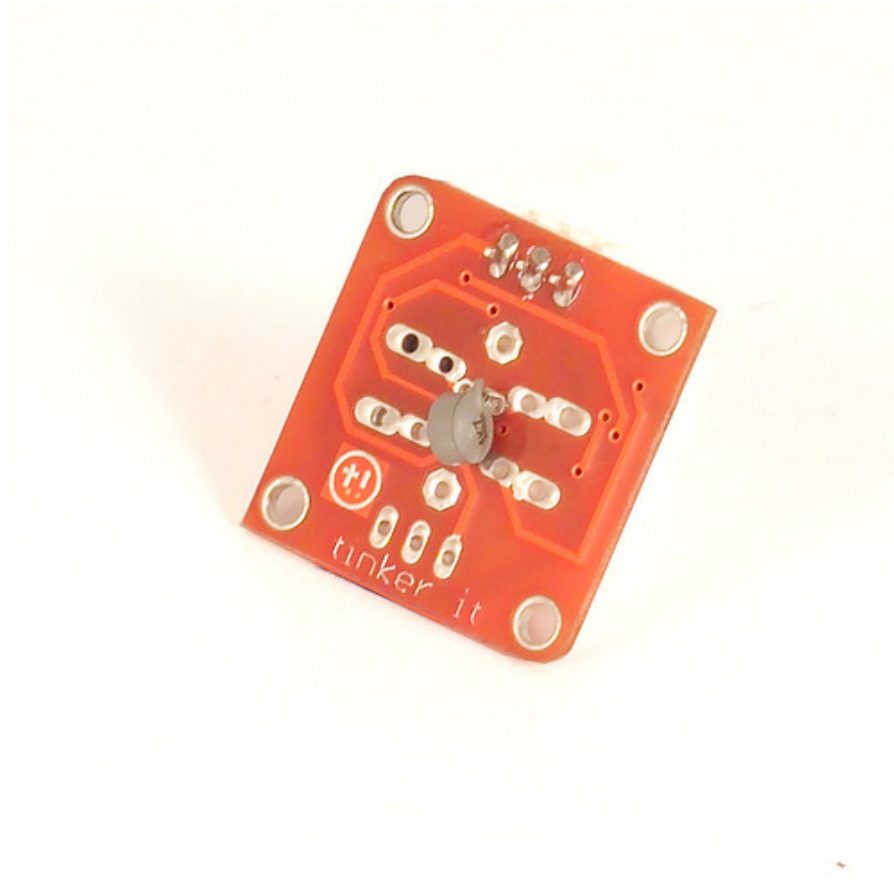**TinkerKit Thermistor Module**

Overview

The **Thermistor** is a resistor whose resistance varies significantly (more than in standard resistors) with temperature.

Output: This module's output approches 5v as the temperature increases. As the temperature decreases, it approaches 0V. When connected to an input on the Arduino using the TinkerKit Shield, expect to read values between 0 and 1023

(NB: any changes in the values will be slow and may not vary a great deal).

Module Description: This module features a Thermistor, a signal amplifier, the standard TinkerKit 3pin connector, a green LED that signals that the module is correctly powered and a yellow LED whose brightness changes according to the temperature.

This module is a **SENSOR**. The connector is an **OUTPUT** which must be connected to one of the **INPUT** connectors on the **TinkerKit Shield**.

Code Example

```
/*
Analog input, analog output, serial output

Reads an analog input pin, and T000200 Themistor Analog Sensor connected
to I0, maps the result to a range from 0 to 255
and uses the result to set the pulsewidth modulation (PWM) on a T010111
LED Module connected on O0.
Also prints the results to the serial monitor.

created 29 Dec. 2008
Modified 4 Sep 2010
by Tom Igoe
modified 7 dec 2010
by Davide Gomba

This example code is in the public domain.

*/

#define O0 11
#define O1 10
#define O2 9
#define O3 6
#define O4 5
#define O5 3
#define I0 A0
#define I1 A1
#define I2 A2
#define I3 A3
#define I4 A4
#define I5 A5

// These constants won't change. They're used to give names
// to the pins used:
const int analogInPin = I0; // Analog input pin that the Themistor is
attached to
const int analogOutPin= O0; // Analog output pin that the LED is attached
to

int sensorValue = 0; // value read from the pot
int outputValue = 0; // value output to the PWM (analog out)

void setup() {
// initialize serial communications at 9600 bps:
Serial.begin(9600);
}

void loop() {
```

```
// read the analog in value:
sensorValue = analogRead(analogInPin);
// map it to the range of the analog out:
outputValue = map(sensorValue, 0, 1023, 0, 255);
// change the analog out value:
analogWrite(analogOutPin, outputValue);

// print the results to the serial monitor:
Serial.print("sensor = " );
Serial.print(sensorValue);
Serial.print("\t output = ");
Serial.println(outputValue);

// wait 10 milliseconds before the next loop
// for the analog-to-digital converter to settle
// after the last reading:
delay(10);
}
```

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