**Experiment 27: thermal resistance**

一：Introduction of thermistor

Thermistor's resistance to temperature sensitive a resistor, also called semiconductor thermistor. It can be made by single crystal, polycrystalline and glass, made of semiconductor materials such as plastic. This resistor has a series of special electrical properties, the basic characteristic is the resistance changes significantly with temperature changes, and volt ampere curve is nonlinear.

二：main features

On the high temperature sensitivity, thermal inertia of small, long life, small volume, simple structure and made of various kinds of different shape and structure. Therefore, with the development of industrial and agricultural production, science and technology, this element has been widely used, such as: temperature measurement, temperature control, temperature compensation, liquid level measurement, pressure measurement, fire alarm, meteorological sounding, the switch circuit, overload protection, suppress voltage fluctuation, time delay, amplitude stability, automatic gain adjustment, laser and microwave power measurement and so on.

三：characteristic parameter

The main characteristic parameters of the thermistor are the resistance temperature characteristic, the voltage current characteristic and the thermal time constant.

四：Connection method



五：Test code

void setup() {

// initialize serial communication at 9600 bits per second:

Serial.begin(9600);

}

// the loop routine runs over and over again forever:

void loop() {

// read the input on analog pin 0:

int sensorValue = analogRead(A0);

// print out the value you read:

Serial.println(sensorValue);

delay(1); // delay in between reads for stability

}

The above code onto your board, open the serial port window, you can see the following：

