SYNACORP TECHNOLOGIES SDN. BHD. (1310487-K)
No.25 Lorong 1/SS3, Bandar Tasek Mutiara,
14120 Simpang Ampat, Penang, Malaysia.
T: +604.586.0026 F: +604.586.0026
WEBSITE: www.synacorp.my EMAIL: sales@synacorp.my

LM35 Analog Temperature Sensor Module

Introduction:

The LM35 Analog Temperature Sensor Module is a low-cost sensing temperature module provide easy to use sensor. LM35 is a measuring temperature device having an analog output voltage proportional to the temperature. It provides output voltage in Centigrade (Celsius). It does not require any external calibration circuitry. The sensitivity of LM35 is 10 mV/degree Celsius. As temperature increases, output voltage also increases.

Features: -

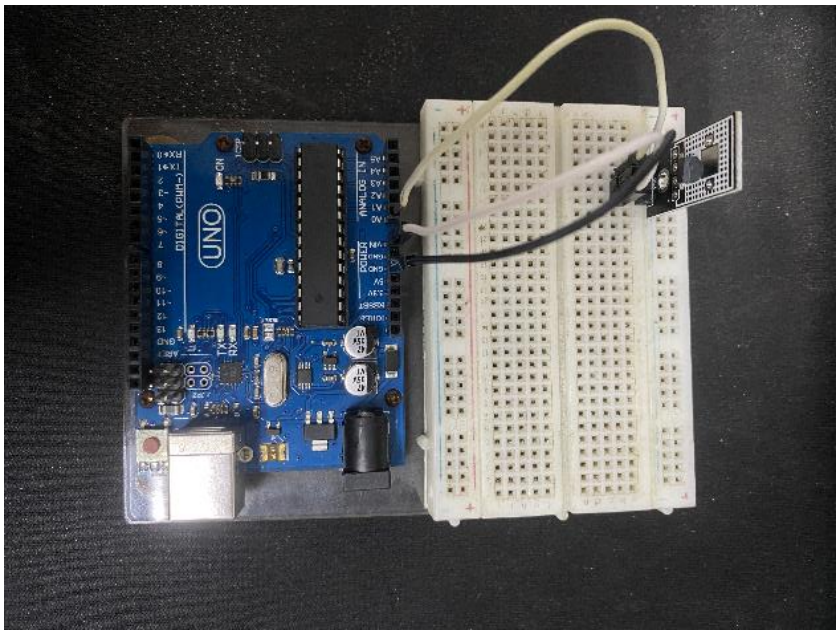
- Rated for Full −55°C to 150°C Range.
- Suitable for Remote Applications.
- Low-Cost Due to Wafer-Level Trimming.
- Operates From 4 V to 30 V.
- Less Than 60-µA Current Drain

Specifications: -

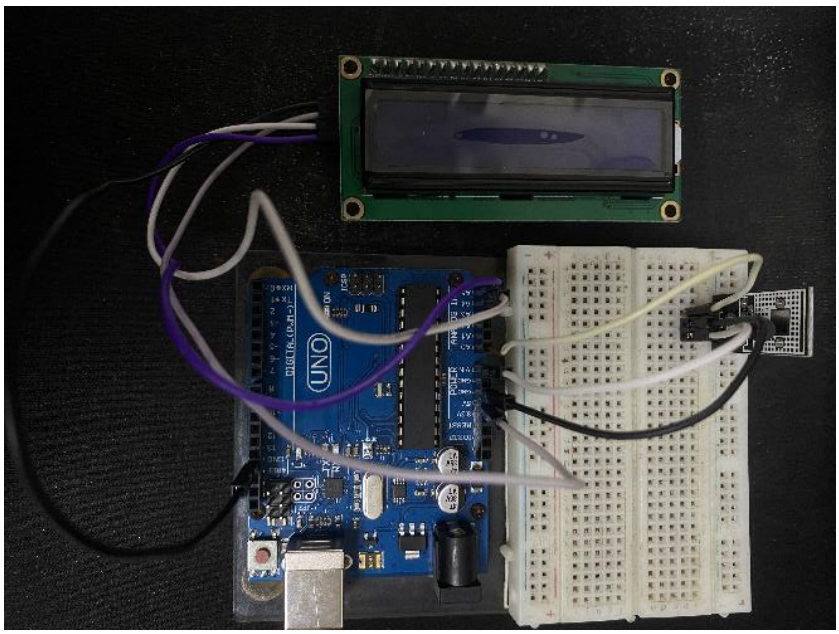
- Operating Voltage: 4 V to 30 V
- Output Voltage: 10mV/°C
- Sensitivity: 10mV/°C
- Linearity Error: ±1°C (for 0°C to +100°C)
- Operating Temperature: -55°C to +150°C

Procedures:-

Step 1: This module has three pins: GND, Analog, and VCC. The GND pin is connected to ground, the Analog pin connected to A0 pin, and the VCC connected to VIN pin.



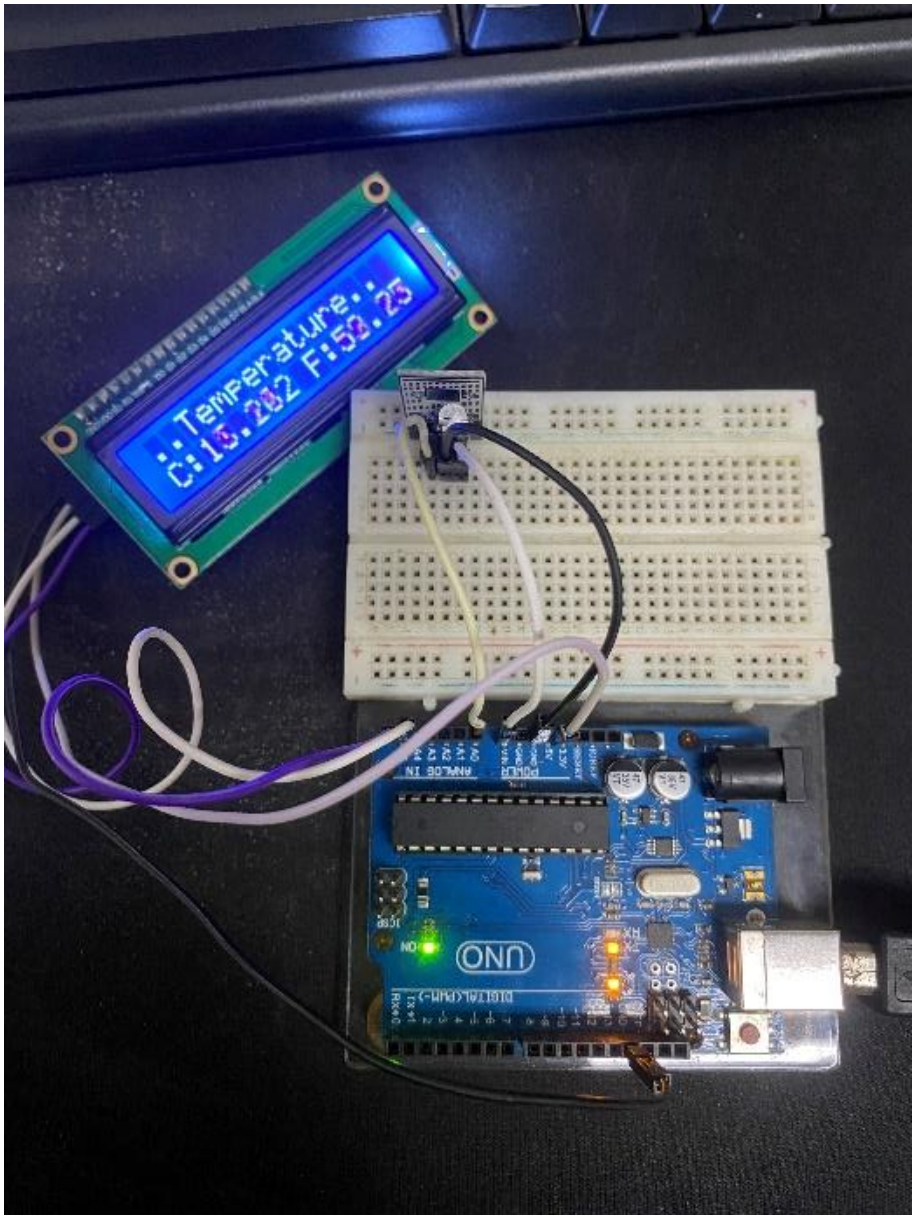
Step 2: After that, LCD has four pin which is GND, VCC, SDA and SCL. The first pin connected to GND pin. The second one connected to 5V. Third pin connected to A4 pin. Lastly, connected to A5 pin.



Step 3: Open Arduino IDE on PC and insert the code given below.

```
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 16, 2);

#define sensor1 A0

void setup() {
  Serial.begin(9600);
  lcd.init();
  lcd.backlight();
}
void loop() {
  int value1 = analogRead(sensor1);
  double tempC = value1 * (5.0 / 1023.0) * 100;
  double tempF = tempC * 9 / 5 + 32;

  lcd.setCursor(0, 0);
  lcd.print("..Temperature..");
  lcd.setCursor(0, 1);
  lcd.print("C:");
  lcd.print(tempC);
  lcd.setCursor(8, 1);
  lcd.print(" F:");
  lcd.print(tempF);

  Serial.print("Temperature C: ");
  Serial.print(tempC);
  Serial.print("'C");
  Serial.print("\t");
  Serial.print("Temperature F: ");
  Serial.print(tempF);
  Serial.println("'F");

}
```

Step 4: Sensor will detect temperature and LCD will display the temperature that was detected.



Conclusion:

The LM35 Temperature sensor module is for measuring the temperature in the immediate surroundings of the sensor. The output of the sensor is an analog voltage from proportional to the Celsius temperature scale.