Your Strategic Solutions Provider

SYNACORP TECHNOLOGIES SDN. BHD. (1310487-K)
No.25 Lorong I/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

REF: **B31-LM35MOD**

DS18B20 Analog Temperature Sensor Module

Description

The DS18B20 digital thermometer provides 9-bit to 12-bit Celsius temperature measurements and has an alarm function with non-volatile user-programmable upper and lower trigger points. The DS18B20 communicates over a 1-Wire bus that by definition requires only one data line (and ground) for communication with a central microprocessor. In addition, the DS18B20 can derive power directly from the data line (parasite power), eliminating the need for an external power supply.

Specifications

- 1-wire communication
- Operating voltage: 3 – 5V
- Operating current: 1.5mA (active)
- Measuring temperature: -55 to +125°C
- ±0.5°C Accuracy from -10°C to +85°C
- Programmable Resolution from 9 Bits to 12 Bits
- Parasitic Power Mode Requires Only 2 Pins for Operation (DQ and GND)

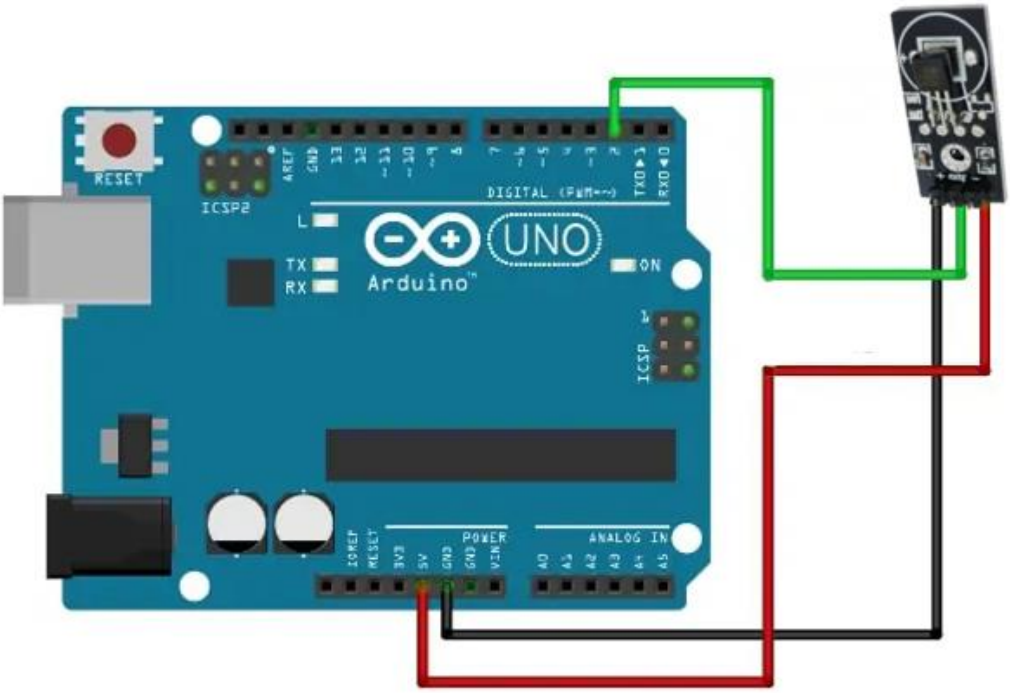
Pin connection

The connections are straightforward. Begin by connecting VDD to the Arduino's 5V pin and GND to ground. Connect the signal pin out to Arduino's digital pin 2.

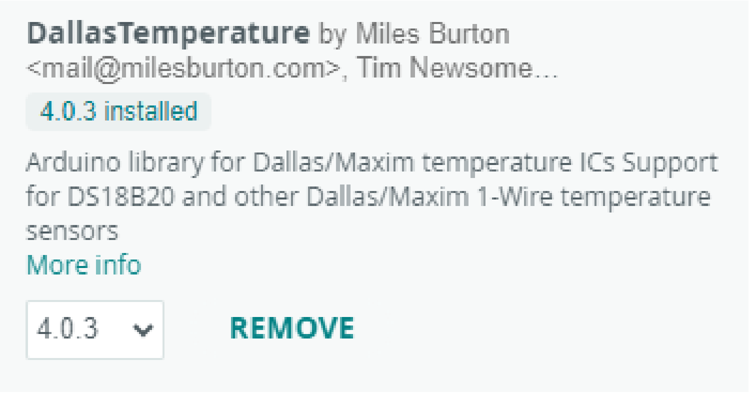
ARDUINO PIN	LM35 PIN
5V	VIN
GND	GND
OUT	D2

Circuit Diagram

The connections are straightforward. Begin by connecting VDD to the Arduino's 5V pin and GND to ground. Connect the signal pin out to Arduino's digital pin 2.



Library



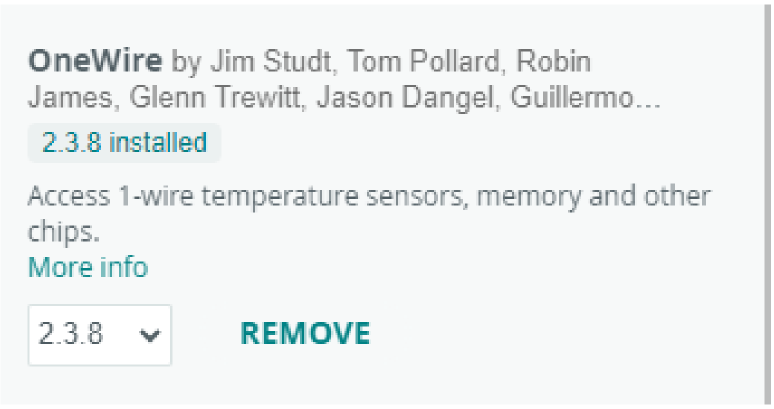
DallasTemperature by Miles Burton <mail@milesburton.com>, Tim Newsome...

4.0.3 installed

Arduino library for Dallas/Maxim temperature ICs Support for DS18B20 and other Dallas/Maxim 1-Wire temperature sensors

More info

4.0.3 REMOVE



OneWire by Jim Studt, Tom Pollard, Robin James, Glenn Trewitt, Jason Dangel, Guillermo...

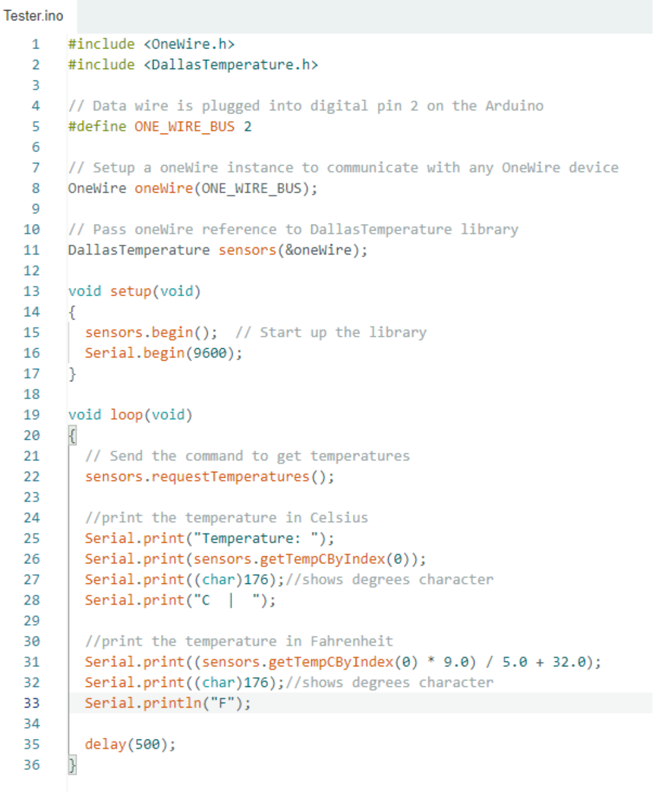
2.3.8 installed

Access 1-wire temperature sensors, memory and other chips.

More info

2.3.8 REMOVE

Coding

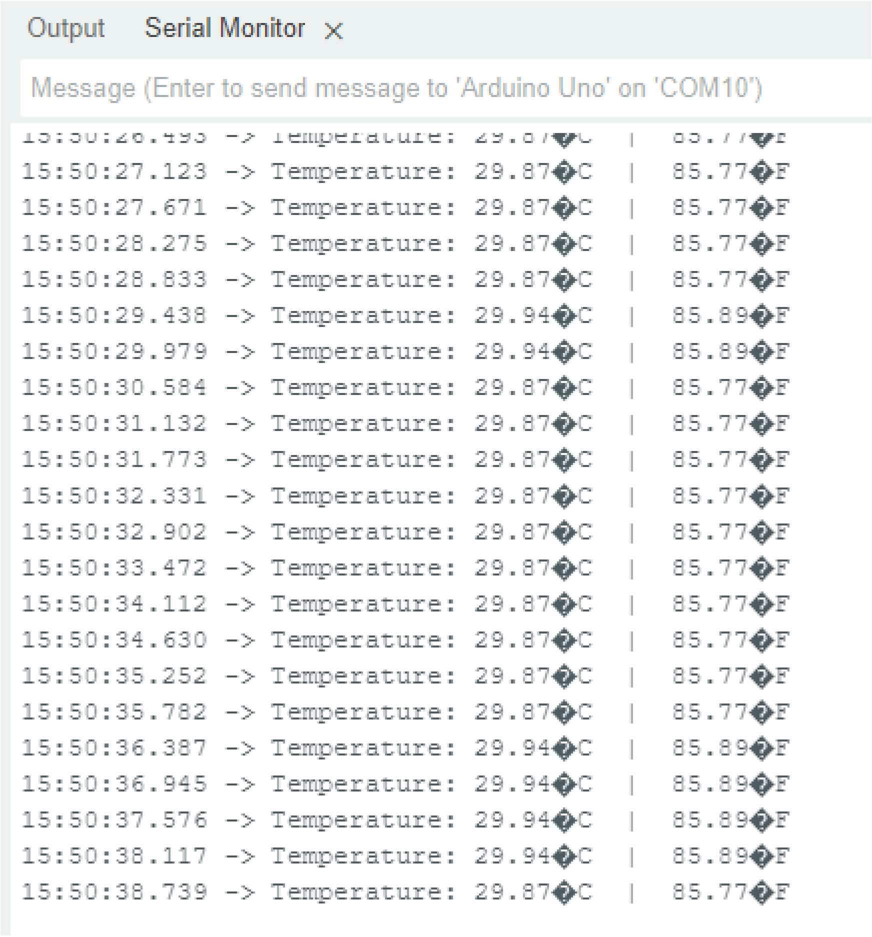


Tester.ino

```
#include <OneWire.h>
#include <DallasTemperature.h>

// Data wire is plugged into digital pin 2 on the Arduino
#define ONE_WIRE_BUS 2

// Setup a oneWire instance to communicate with any OneWire device
OneWire oneWire(ONE_WIRE_BUS);

// Pass oneWire reference to DallasTemperature library
DallasTemperature sensors(&oneWire);

void setup(void)
{
  sensors.begin();  // Start up the library
  Serial.begin(9600);
}

void loop(void)
{
  // Send the command to get temperatures
  sensors.requestTemperatures();

  //print the temperature in Celsius
  Serial.print("Temperature: ");
  Serial.print(sensors.getTempCByIndex(0));
  Serial.print((char)176);//shows degrees character
  Serial.print("C  |  ");

  //print the temperature in Fahrenheit
  Serial.print((sensors.getTempCByIndex(0) * 9.0) / 5.0 + 32.0);
  Serial.print((char)176);//shows degrees character
  Serial.println("F");

  delay(500);
}
```

Result

In the Arduino IDE, choose Tools > Serial monitor. You should see a wave similar to the image below, when you swipe your hand over the sensor.



```
15:50:26.493 -> Temperature: 29.87�C  |  85.77�F
15:50:27.123 -> Temperature: 29.87�C  |  85.77�F
15:50:27.671 -> Temperature: 29.87�C  |  85.77�F
15:50:28.275 -> Temperature: 29.87�C  |  85.77�F
15:50:28.833 -> Temperature: 29.87�C  |  85.77�F
15:50:29.438 -> Temperature: 29.94�C  |  85.89�F
15:50:29.979 -> Temperature: 29.94�C  |  85.89�F
15:50:30.584 -> Temperature: 29.87�C  |  85.77�F
15:50:31.132 -> Temperature: 29.87�C  |  85.77�F
15:50:31.773 -> Temperature: 29.87�C  |  85.77�F
15:50:32.331 -> Temperature: 29.87�C  |  85.77�F
15:50:32.902 -> Temperature: 29.87�C  |  85.77�F
15:50:33.472 -> Temperature: 29.87�C  |  85.77�F
15:50:34.112 -> Temperature: 29.87�C  |  85.77�F
15:50:34.630 -> Temperature: 29.87�C  |  85.77�F
15:50:35.252 -> Temperature: 29.87�C  |  85.77�F
15:50:35.782 -> Temperature: 29.87�C  |  85.77�F
15:50:36.387 -> Temperature: 29.94�C  |  85.89�F
15:50:36.945 -> Temperature: 29.94�C  |  85.89�F
15:50:37.576 -> Temperature: 29.94�C  |  85.89�F
15:50:38.117 -> Temperature: 29.94�C  |  85.89�F
15:50:38.739 -> Temperature: 29.87�C  |  85.77�F
```