# LM35 temperature sensor library for Arduino

This is an accurate LM35 analog temperature sensor library for Arduino with noise cancellation.

## Library features

- Synchronous 10-bit unsigned temperature read
- Temperature range: 0.0 .. 110.0 degree Celsius
- Accuracy: 0.1 degree Celsius
- Noise cancellation
- Small footprint

## Hardware

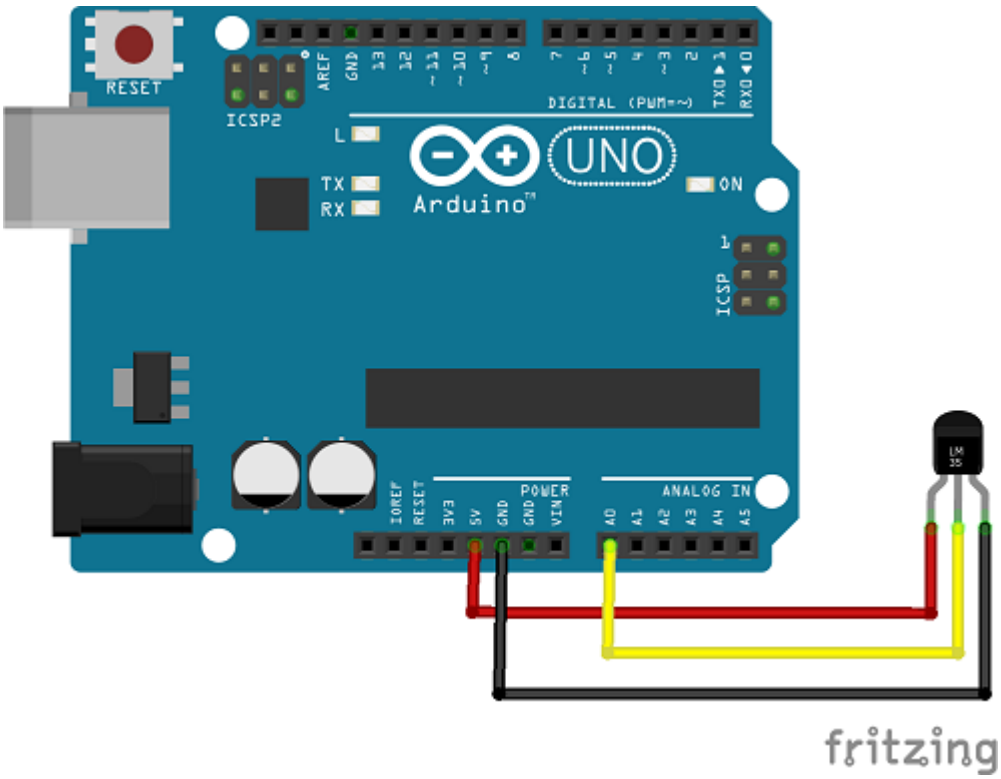
### Supported hardware

- All ATmega328P MCU (Arduino UNO, Micro, Nano, etc)
- All ATmega32U4 MCU (Arduino Leonardo, Pro Micro, etc)
- Arduino ATmega2560

**Notes:**

- This library changes analog pins to ADC 1.1V internal reference voltage which affects all analog pins.
- The function `analogReference()` may not be supported with other non-AVR MCU's.

### Arduino UNO - LM35 example

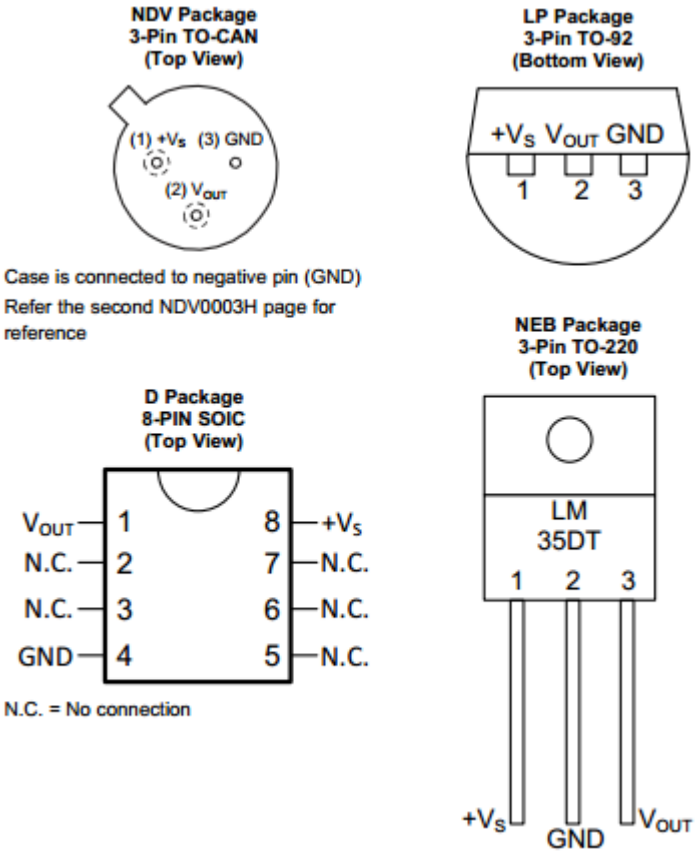



| LM35 | Arduino UNO |
|---|---|
| GND | GND |
| Vs | 5V (or 3.3V) |
| Vout | A0 (ANALOG pin) |

**Notes:**

- Keep wires short to prevent noise.

## LM35 pins




# Documentation

DHT35 datasheet

# LM35 specifications

- Supply voltage: 3.3V .. 30V
- Low power: Around 65uA
- Analog voltage interface

# Examples

Examples | ErriezLM35:

- Example

# Usage

**Initialization**

```
#include <LM35.h>

// Connect LM35 data pin to Arduino DIGITAL pin
#define LM35_PIN   A0

LM35 lm35 = LM35(LM35_PIN);
```

### Read temperature and humidity

```
void loop()
{
  // Read unsigned temperature from sensor
  uint16_t lm35_temp = lm35.readTemperature();

  // Print temperature
  Serial.print(F("LM35: "));
  Serial.print(lm35_temp / 10);
  Serial.print(F("."));
  Serial.print(lm35_temp % 10);
  Serial.println(F(" *C"));

  // Wait some time
  delay(2000);
}
```

### Serial output

```
Analog LM35 temperature sensor example

LM35: 18.1 *C
LM35: 18.2 *C
LM35: 18.2 *C

...
```