LM35 is an analog, linear temperature sensor whose output voltage varies linearly with change in temperature.

The voltage output of the LM35 increases 10mV per degree Celsius rise in temperature.

Note:- LM35 is an analog temperature sensor. This means the output of LM35 is an analog signal. Microcontrollers dont accept analog signals as their input directly. We need to convert this analog output signal to digital before we can feed it to a microcontroller’s input. For this purpose, we can use an ADC( Analog to Digital Converter).If we are using a basic microcontroller like 8051, we need to use an external ADC to convert analog output from LM35 to digital. We then feed the output of ADC ( converted digital value) to input of 8051. But modern day boards like Arduino and most modern day micro controllers come with inbuilt ADC. Our arduino uno has an in built 10 bit ADC (6 channel). We can make use of this in built ADC of arduino to convert the analog output of LM35 to digital output. Since Arduino uno has a 6 channel inbuilt ADC, there are 6 analog input pins numbered from A0 to A5. Connect analog out of LM35 to any of these analog input pins of arduino.

Note:- LM35 is available in the market in 3 series variations – LM35A, LM35C and LM35D series. The main difference between these 3 versions of LM35 IC are in their range of temperature measurements. The LM35D series is designed to measure from 0 degree Celsius to 100 degree Celsius, where as the LM35A series is designed to measure a wider range of -55 degree Celsius to 155 degree Celsius. The LM35C series is designed to measure from -40 degree Celsius to 110 degree Celsius.

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| int val;  int tempPin = 1;  void setup()  {  Serial.begin(9600);  }  void loop()  {  val = analogRead(tempPin);  float mv = ( val/1024.0)\*5000;  float cel = mv/10;  float farh = (cel\*9)/5 + 32;  Serial.print("TEMPRATURE = ");  Serial.print(cel);  Serial.print("\*C");  Serial.println();  delay(1000);  /\* uncomment this to get temperature in farenhite  Serial.print("TEMPRATURE = ");  Serial.print(farh);  Serial.print("\*F");  Serial.println();  \*/  } |

https://create.arduino.cc/projecthub/infoelectorials/project-003-arduino-lm35-temperature-sensor-project-0a43ba