SYNACORP TRADING & SERVICES
No.9, 1st Floor, Lorong 1/SS2, Bandar Tasek Mutiara, 14120 Simpang Ampat, S.Prai (S), Penang
Tel : +604.502.1726 Hunting Line : 012.403.3474 Fax : +604.502.1726
(Website) http://www.synacorp.my (Email) sales@synacorp.com.my

Detecting Vibration using Vibration Tilt Sensor Switch (High sensitivity) with Arduino.

Introduction:

This is high sensitivity vibration sensor. It acts like a normally open switch, when it senses vibration, the terminals touches together and create a short.

It is sealed and reliable, yet low cost vibration sensor. You can apply it to toy, household appliance, sport equipments, burglar alarm or security system.

Features:

- Small and compact
- Act like normally open switch
- Highly sensitive to vibration/movement (contact)
- Low power
- Dimension: 4.5mm (diameter) x 14mm

Components Needed:

- Vibration Tilt Sensor (SW-18010P) – 1
- Arduino Uno (Mega and Nano also compatible) – 1
- Jumper Wires – 2
- Breadboard – 1

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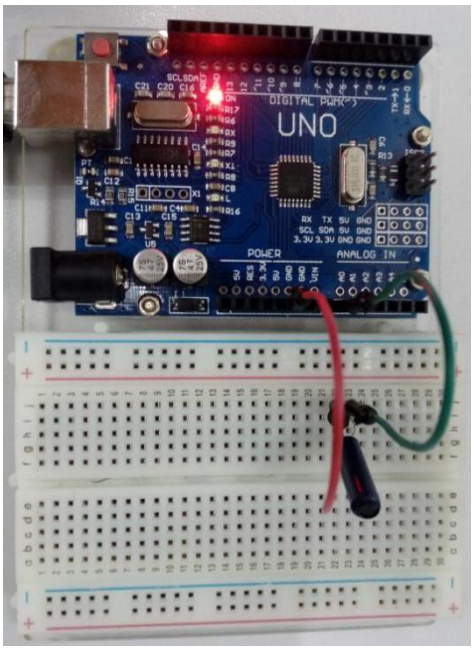
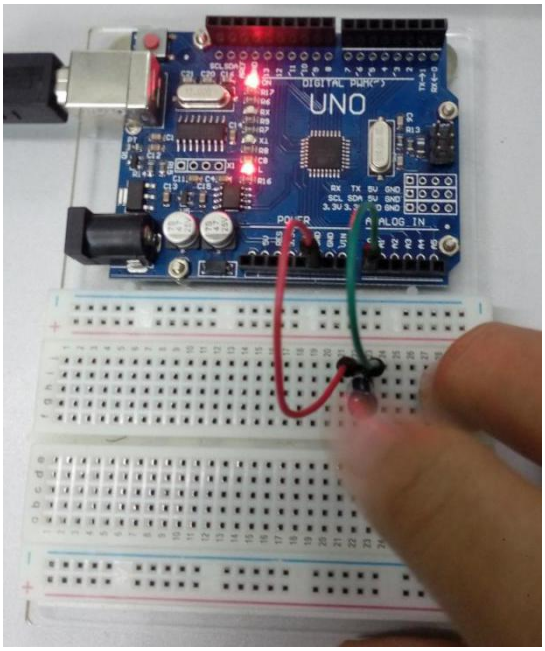
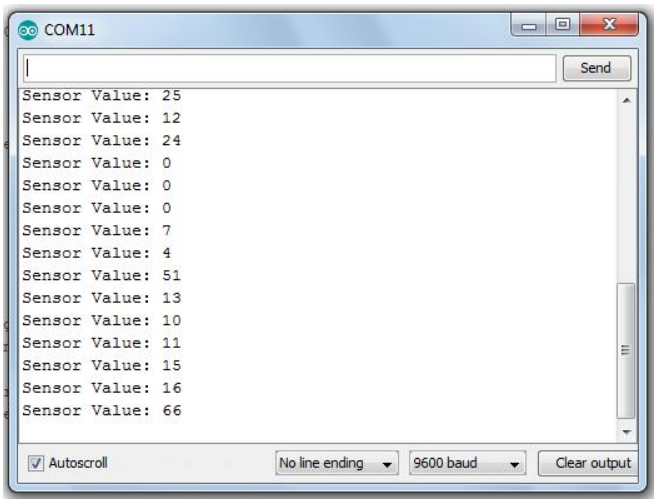
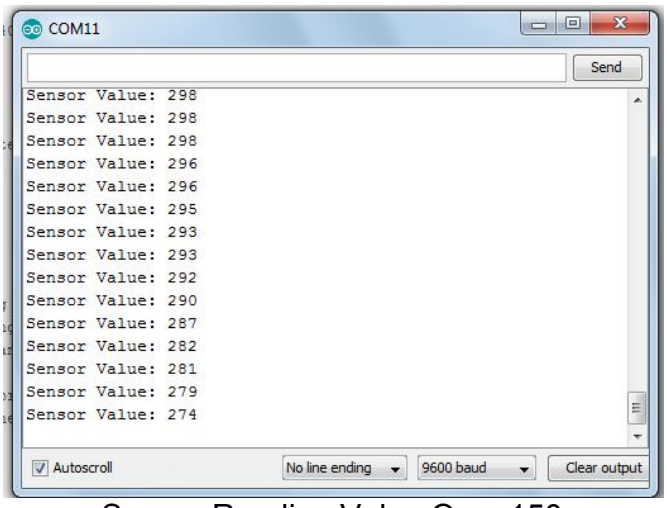
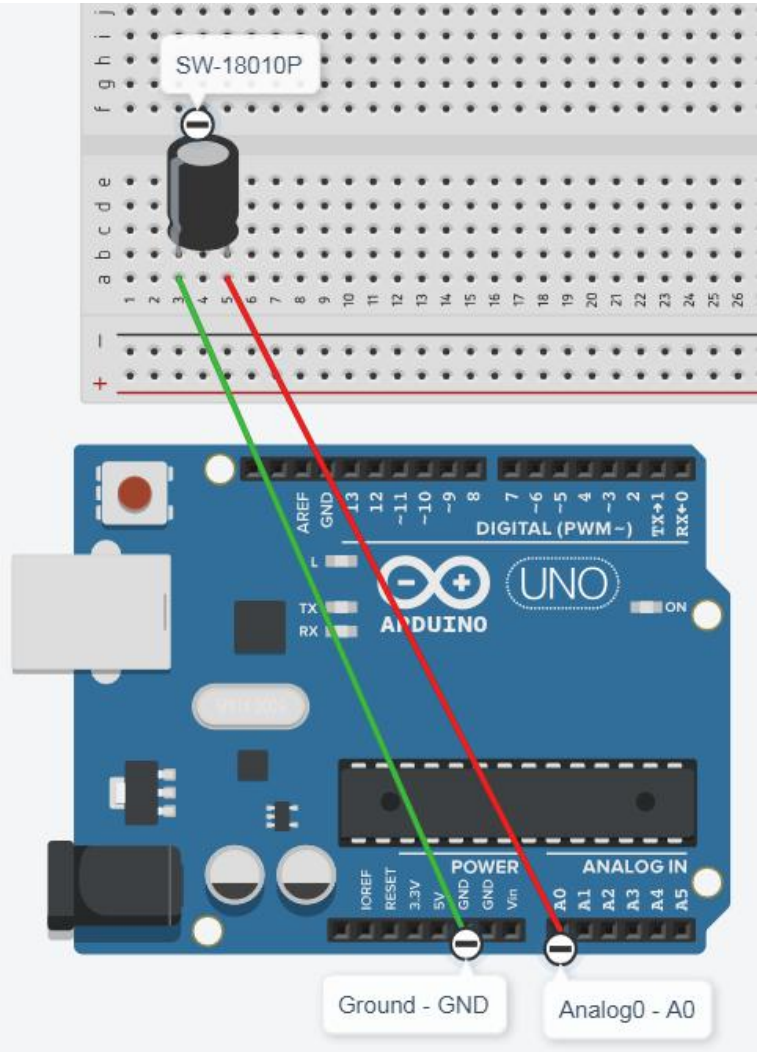
Objectives:

When the **vibration sensor** detects the vibration it will **turn ON** the **LED**, when there is no vibration detected the **LED** will **turn OFF**. The **Serial Monitor** on the **Arduino IDE** will be displaying the sensor reading values.

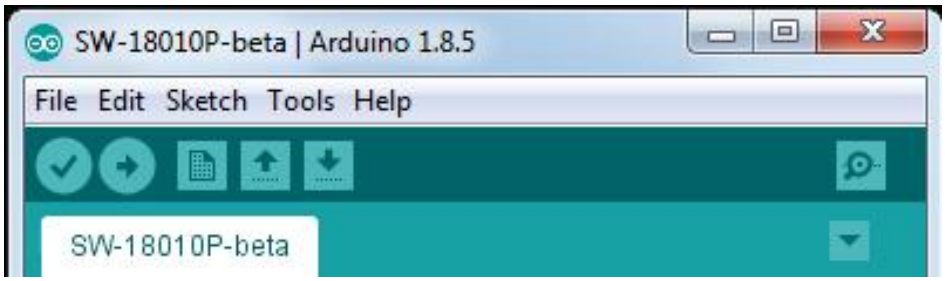
When No Vibration Detected	When Vibration Detected
 LED turn OFF	 LED turn ON
 Sensor Reading Value below 150	 Sensor Reading Value Over 150

Instructions

1. **Circuit Connection-** Connect the sensor and Arduino same as picture provided below. Analog0 @ A0 to sensor pin and Ground terminal to another sensor pins.



2. **Coding-** Insert the following coding in the Arduino IDE (Copy & Paste). Connect the Arduino board to PC. Click Verify and Upload.



```
//TESTING SW-18010p.
//The LED on Arduino board (built-in) will turn on when the vibration is detected.
//Connect any sensor pin to Analog0(A0) and to 5v each.(THIS SENSOR DOESN'T HAVE
POLARITY).

int sensor;                     //Variable to store analog value (0-400)
const int LED = 13;             //Define LED on Board (Built-In)

void setup()
{
  Serial.begin(9600);           //To see the values of the sensor detected based on its state
(static or vibrate).
  pinMode(LED, OUTPUT);         //Define LED 13 on the Arduino board (built-in) as output.
}

void loop()
{
  sensor = analogRead(A0);
                                //While sensor is not moving, analog pin receive 200~400++ value.
  if (sensor<150)               //You may change this value according to your sensor
sensitivity.
  {                             //When the sensor value below(<) than 150 will turn ON the LED.
    digitalWrite (LED, HIGH);   //Turn LED ON.
    Serial.print("Sensor Value: ");   //Show the ("Sensor Value: ") text or word at the serial
monitor.
    Serial.println(sensor);     //Shows the sensor reding valueat the serial monitor.
(Example: "Sensor Value: 108")
  }

  else
  {
    digitalWrite (LED, LOW);    //When the sensor value over(>) than 150 will turn OFF the
LED.
    Serial.print("Sensor Value: ");   //Show the "Sensor Value: " text or word at the serial
monitor.
    Serial.println(sensor);     //Shows the sensor reding valueat the serial monitor.
(Example: "Sensor Value: 108")
  }
  delay(500);                   //Small delay (ms) for the next values reading and LED blink.
}
```

Sample Program Code.zip