

VIBRATION SENSOR

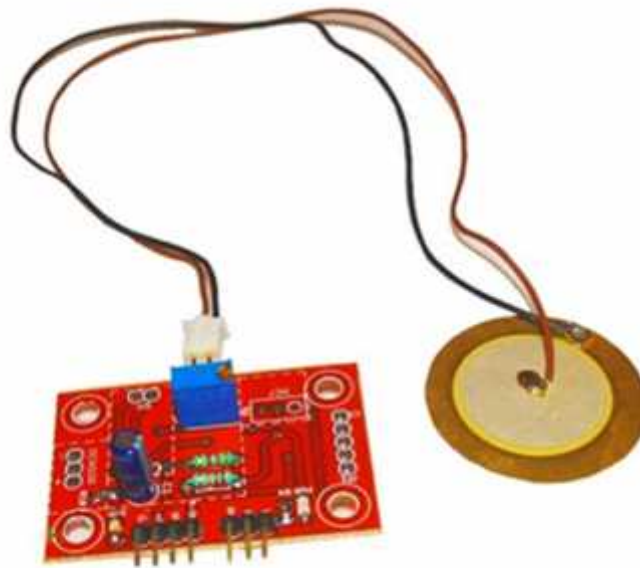
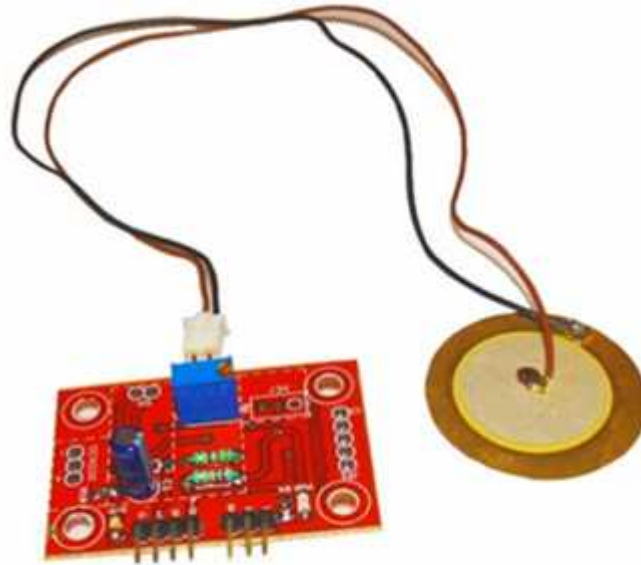


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OVERVIEW

INTRODUCTION



This basic piezo sensor can be used in anti-theft devices, electronic locks, mechanical equipment vibration detection, sound gesture application and detection range bull's-eye counts vibration sensor occasions. These vibration levels could be given to any controller/processor and necessary decisions could be taken through it. Module triple output mode, digital output simple, analog output more accurate, serial output with exact readings.

FEATURES

- Sensitivity adjustable.
- The vibration detection has no direction.
- With analog, digital and TTL level output signal.
- With mounting holes, firmware installation flexible and convenient.
- Module triple output mode, digital output is simple, analog output more accurate, serial output with exact readings.

APPLICATIONS

- Vibration analysis
- Shock detection and event capture
- Condition monitoring

SPECIFICATIONS

Parameter	Value
Operating Voltage	+5v dc regulated
Vibration	Digital value is indicated by out pin

PIN DETAILS

PIN	NAME	DETAILS
1	out	Active high output
2	+5v	Power supply
3	gnd	Power supply gnd
4	rx	receiver
5	tx	transmitter
6	gnd	Power supply gnd

USING THE SENSOR

- Connect +5v to pin 2 and ground to pin 3 and 6.
- Pin 4 and 5 should be connected to particular transmitter and receiver pin of controller.
- Output pin may be connected to any port pins and can be used to any application.

WORKING

Digital vibration sensing in the ADIS16220 starts with a wide- bandwidth MEMS accelerometer core that provides a linear motion-to-electrical transducer function. It uses a fixed frame and a moving frame to form a differential capacitance network that responds to linear acceleration. Tiny springs tether the moving frame to the fixed frame and govern the relationship between acceleration and physical displacement. A modulation signal on the moving plate feeds through each capacitive path into the fixed frame plates and into a demodulation circuit, which produces the electrical signal that is proportional to the acceleration acting on the device.

SCHEMATIC AND CODES

ATMEL

<http://researchdesignlab.com/vibration-digital-code>

<http://researchdesignlab.com/vibration-digital-i/oshematic.html>

ATMEL UART CODE

<http://researchdesignlab.com/vibration-uart-code>

<http://researchdesignlab.com/vibration-sensor-urat-schematic.html>

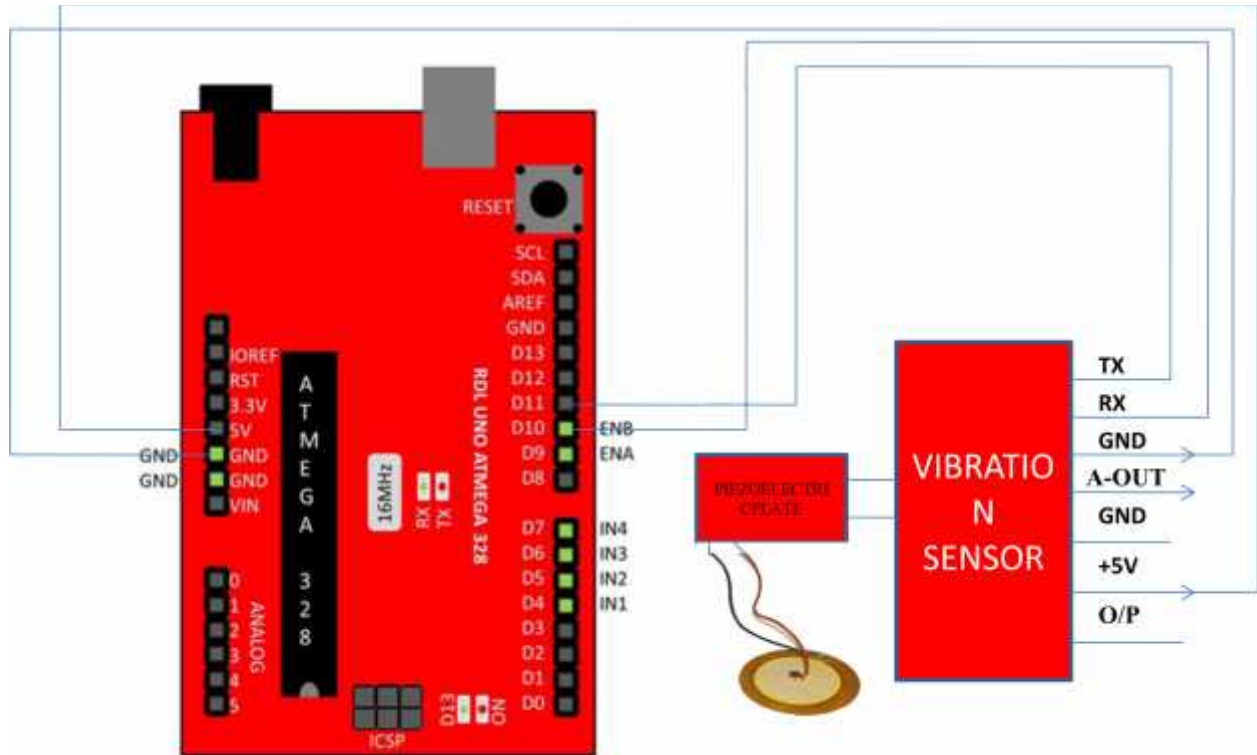
PIC

<http://researchdesignlab.com/digital-vibration-pic-code.html>

RASPBERRYPI AND BEAGLEBONE

<http://researchdesignlab.com/digital-vibration-raspberryandbeaglebone-code.html>

CONNECTION DIAGRAM



ARDUINO CODE

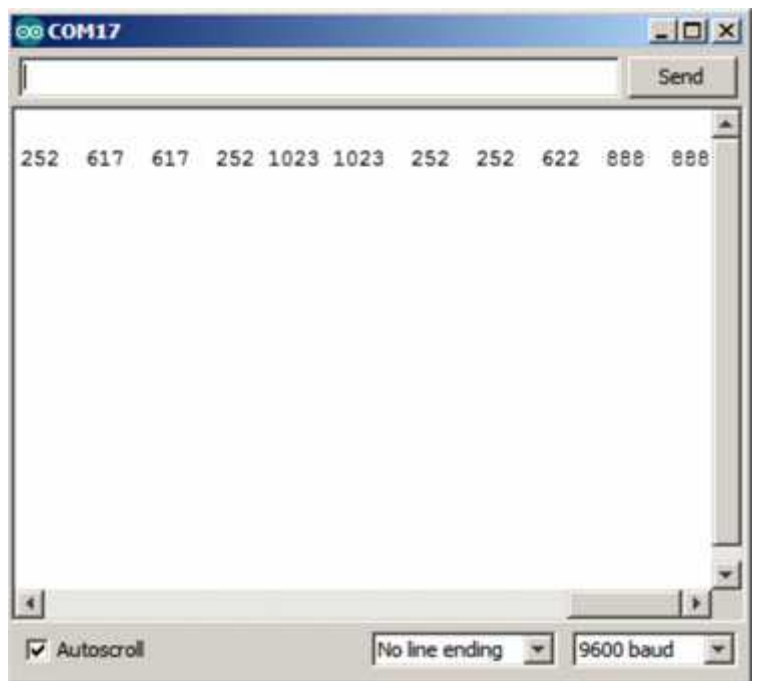
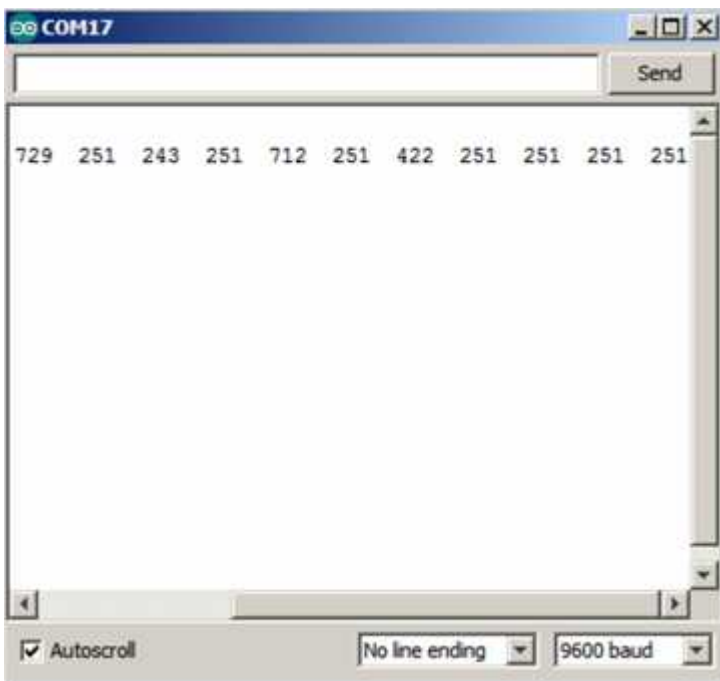
```
#include <SoftwareSerial.h>

SoftwareSerial mySerial(10, 11);           // RX, TX

void setup()
{
    // Open serial communications and wait for port to open:
    Serial.begin(9600);
    while (!Serial) {
        ;                                // wait for serial port to connect.
    }
}
```

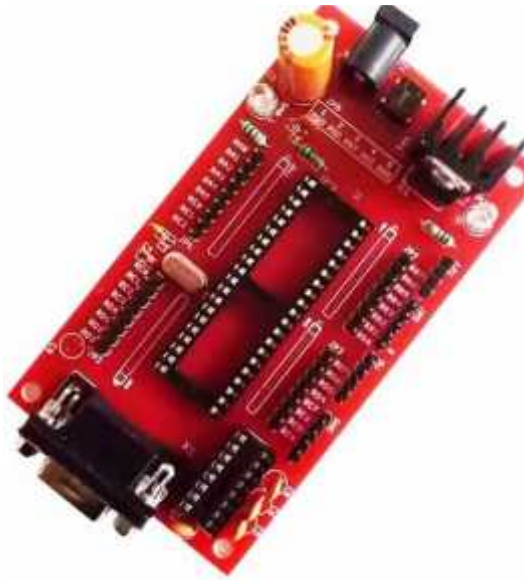
```
Serial.println("Digital all sensor");  
mySerial.begin(9600); // set the data rate for the SoftwareSerial port  
}  
void loop() // run over and over  
{  
if (mySerial.available())  
Serial.write(mySerial.read());  
}
```

OUTPUT

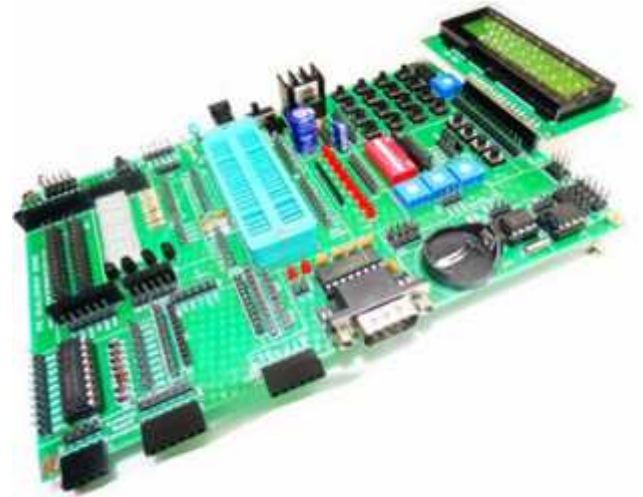


RELATED PRODUCTS

PIC PROJECT BOARD



PIC DEVELOPMENT BOARD



ATMEL PROJECT BOARD



ATMEL DEVELOPMENT BOARD

