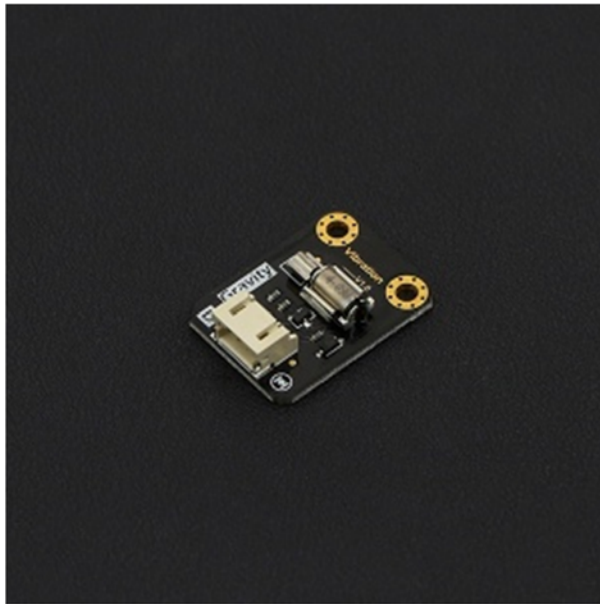


## Gravity: Vibration Module SKU: DFR0440

From Robot Wiki



The Micro Vibration Module

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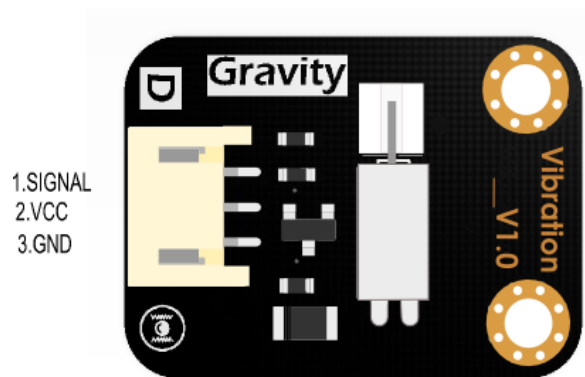
### Introduction

Have you ever wondered how to implement a vibration motor in your project, like you would find in a mobile phone? The newest vibration module in the DFRobot "Gravity" series gives you in-depth understanding of vibration motor principles. This module uses a high quality small vibration motor that is the size of a coin. Using the Gravity 3 pin interface, you can plug and play this module for your convenience.

## Specification

- Operating Voltage: 5v
- Control mode: High-Low level/PWM signal
- Dimension: 30 x 22 mm/ 1.18 \* 0.78 inches

## Board Overview



Pinout		
Num	Label	Description
1	Signal	Control signal input
2	VCC	VCC
3	GND	GND

Pinout

## Tutorial

1. Introduce working principles of the vibration module.
2. Introduce control mode of the micro vibration module by simple examples and pictures.(high level work, low level stop).
3. Control the module vibration intensity by PWM.

## Requirements

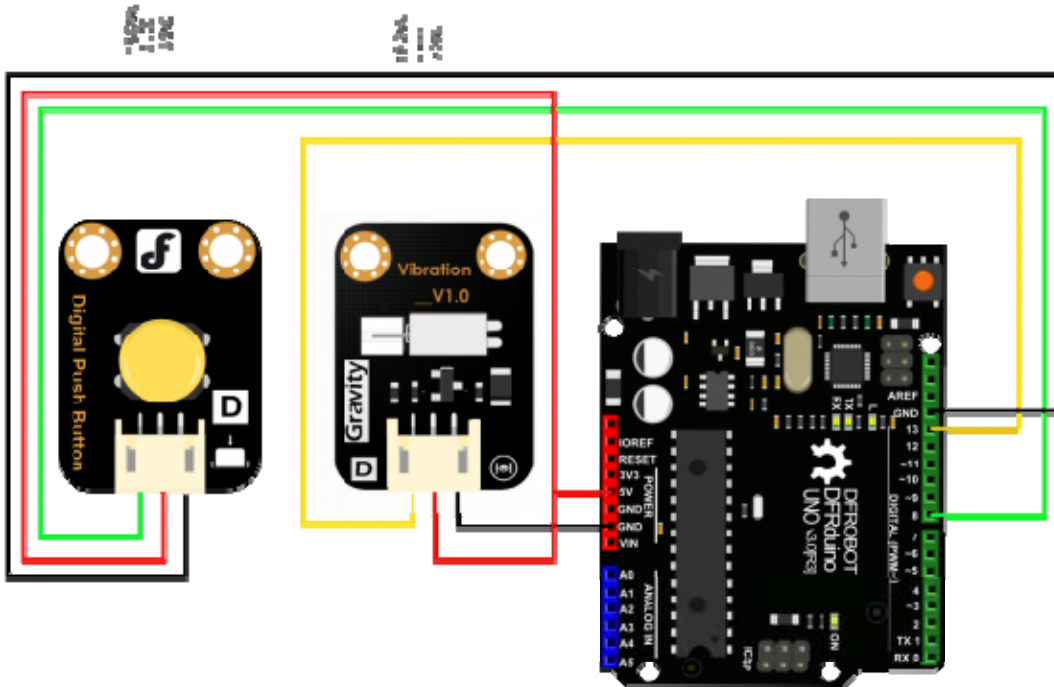
- **Hardware**
  - DFRduino UNO x1
  - Vibration Module x1
  - Dupont jumpers
  - Digital Push Button DFR0029-Y X1
- **Software**
  - Arduino IDE [Click to download Arduino IDE](https://www.arduino.cc/en/Main/Software)

<https://www.arduino.cc/en/Main/Software>

## Working Principle

The vibration module uses a vibration motor as its vibration source. Vibration is created by a set of adjustable weighted blocks attached to the end of rotating shaft. The centrifugal force generated by high speed rotation of the shaft and weighted blocks creates vibration.

## Control the Module by the Switch



push button control diagram

```
/*  
 * Vibration  
 *  
 * This example shows that the module will vibrate for 5 seconds when we press the button  
 *  
 * @author Dongzi(1185787528@qq.com)
```

```

* @version  V1.0
* @date  2016-5-26
* All above must be included in any redistribution
* *****/
const int buttonPin = 8;    // the number of the pushbutton pin
const int VibPin = 11;     // the number of the Vibration Module pin
int key=0;
void setup()
{
  pinMode(VibPin,OUTPUT);   // Set the digital pin(11) as output
  pinMode(buttonPin, INPUT); // Set the digital pin(8) as input
}

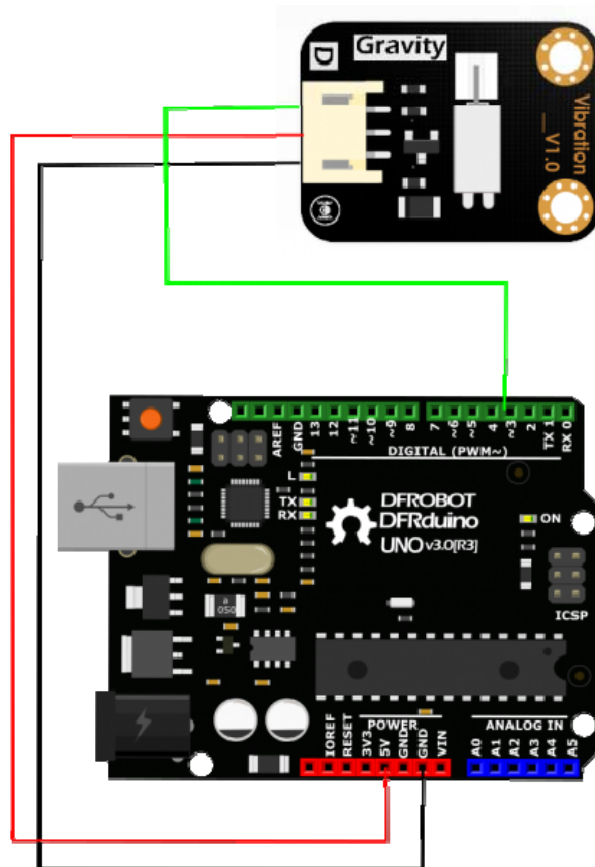
void loop()
{
  key=digitalRead(buttonPin);
  if(key==LOW)
  {
    digitalWrite(VibPin,HIGH); //Turn on the Vibration Module
    delay(5000); //Waits for 5 seconds
    digitalWrite(VibPin,LOW); //Turn off the Vibration Module
  }
  else
    digitalWrite(VibPin,LOW); //Turn off the Vibration Module
  // put your main code here, to run repeatedly:

}

```

Results: when the button of pin 8 is pressed, the vibration module will be on for 5 seconds, then stop and wait for the button to be pushed again

## Control the Module Amplitude



```
//Arduino Sample Code for Vibration Module
//www.DFRobot.com
//Version 1.0

#define Vibration 3    //define driver pins

void setup()
{
  pinMode(Vibration,OUTPUT);
  Serial.begin(9600);    //Baudrate: 9600
}
void loop()
{
  analogWrite(Vibration, 160);    //PWM
  delay(1000);
}
```

```
    analogWrite(Vibration, 200);    //PWM
    delay(1000);
    analogWrite(Vibration, 255);    //PWM
    delay(1000);
}
```

Results: With the PWM value increases, amplitude increases

## FAQ

For more questions or interesting projects, you can [visit the forum!](#)