



# Grove - Hall Sensor User Manual

Release date: 2015/9/22

Version: 1.0

Wiki: [http://www.seeedstudio.com/wiki/Grove\\_-\\_Hall\\_Sensor](http://www.seeedstudio.com/wiki/Grove_-_Hall_Sensor)

Bazaar: [http://www.seeedstudio.com/depot/Grove-Hall-Sensor-p-965.html?cPath=25\\_28](http://www.seeedstudio.com/depot/Grove-Hall-Sensor-p-965.html?cPath=25_28)

## Document Revision History

---

Revision	Date	Author	Description
1.0	Sep 22, 2015	Loovee	Create file

## Contents

Document Revision History .....	2
1. Introduction .....	2
2. Features .....	3
3. Specification .....	4
4. Application Ideas .....	5
5. Usage .....	6
6. Resources .....	7

### *Disclaimer*

*For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.*

*Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.*

### *Copyright*

*The design of this product (including software) and its accessories is under tutelage of laws. Any action to violate relevant right of our product will be penalized through law. Please consciously observe relevant local laws in the use of this product.*

## 1. Introduction

---

The Hall sensor is based on Hall Effect, which is the production of a voltage difference across an electrical conductor, transverse to an electric current in the conductor and a magnetic field perpendicular to the current. There is a continuous-time switch on this Grove. The output of these devices switches low (turns on) when a magnetic field (south polarity) perpendicular to the Hall sensor exceeds the operate point threshold BOP, and it switches high (turn off) when the magnetic field disappears. The twig can be used to measure RPM.



## 2. Features

---

- Grove Compatible Interface
- 400ns transition period for rise and fall.
- Continuous-time hall effect sensor
- Reverse battery protection

### 3. Specification

---

Item	Min	Typical	Max	Unit
Supply Voltage	3.8	5.0	24	V
Supply Current	4.1	-	24	mA
Operating Temperature	-40	-	85	°C

## 4. Application Ideas

---

- RPM meter.
- Simple dc motor.

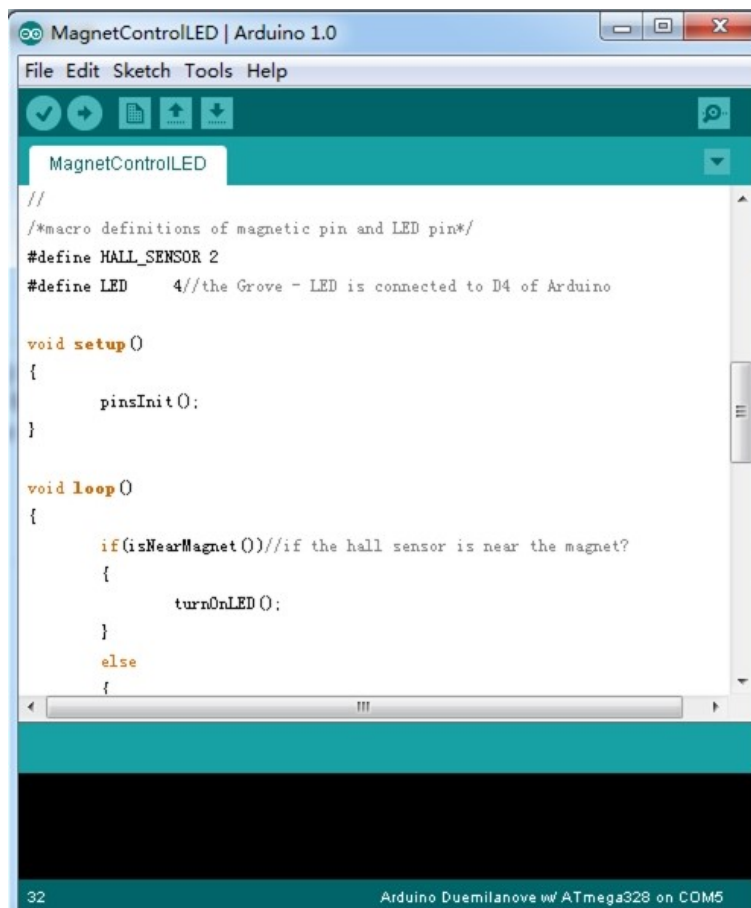


## 5. Usage

---

The Hall Sensor is used by utilizing the external interrupts available on the arduino/seeeduino. In this example we are using interrupt 0, found on digital pin 2. For other interrupts, see the [attachInterrupt\(\)](#).

- Connect the Hall Sensor to Digital port 2 of the [Grove - Basic Shield](#) using a 4 pin cable and connect Grove-LED to Digital Port 4.
- Then connect Arduino to PC by using a USB cable.
- Download the [File: Hall Sensor Code](#)
- Open one of two code. For example Demo **MagnetControlLED**



```

MagnetControlLED | Arduino 1.0
File Edit Sketch Tools Help
MagnetControlLED
//
/*macro definitions of magnetic pin and LED pin*/
#define HALL_SENSOR 2
#define LED 4//the Grove - LED is connected to D4 of Arduino

void setup()
{
  pinsInit();
}

void loop()
{
  if(isNearMagnet())//if the hall sensor is near the magnet?
  {
    turnOnLED();
  }
  else
  {
  }
}
32 Arduino Duemilanove w/ ATmega328 on COM5
  
```

- Upload the code, please click [here](#) if you do not know how to upload.
- When a magnet whose south pole is facing up is approaching to the onboard sensor, the LED will be turned on. Otherwise, the LED will be turned off.

## 6. Resources

---

- [Grove-Hall Sensor Eagle File](#)
- [File: Hall Sensor Demo Code](#)
- [A1101 datasheet](#)

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Seeed Studio:](#)

[101020046](#)