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## KY-024 LINEAR MAGNETIC HALL MODULE

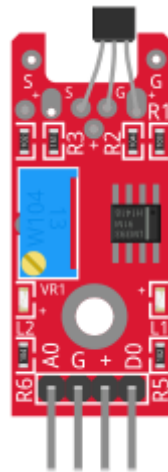
Magnetic  ArduinoModules  November 19, 2018 [Last Updated]  4

 [Arduino](#), [Hall Magnetic](#), [KY-024](#), [Magnetic](#)

### Description

The KY-024 Linear magnetic Hall sensor reacts in the presence of a magnetic field. It has a potentiometer to adjust the sensitivity of the sensor and it provides both analog and digital output

The digital output acts as a switch that will turn on/off when a magnet is near, similar to the [KY-00](#). On the other hand, the analog output can measure the polarity and relative strength of the magnet field.



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### Specifications

The KY-024 module consists of a 49E Linear Hall-Effect Sensor, a LM393 Dual Differential Compar, a potentiometer, two leds and six resistors. It's compatible with popular electronics platforms like Arduino, Raspberry Pi, Esp8266 and Teensy.

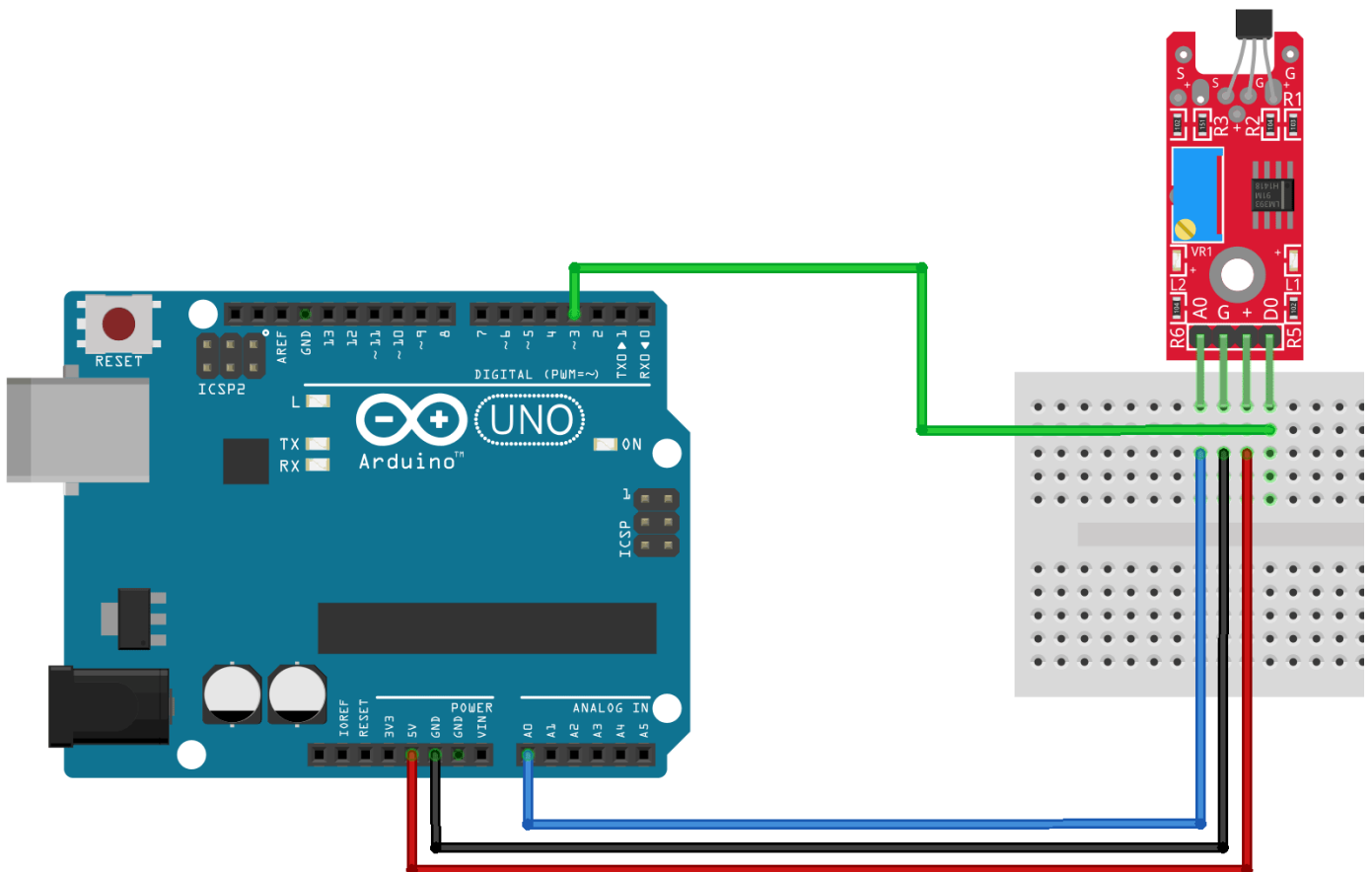
Operating Voltage  
Sensitivity  
Board Dimensions

2.7V to 6.5V  
1.0 mV/G min., 1.4 mV/G typ., 1.75 mV/G max  
1.5cm x 3.6cm [0.6in x 1.4in]

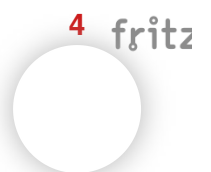
### Arduino KY-024 Connection Diagram

Connect board's power line (+) and ground (G) to 5V and GND respectively. Connect the digital sig (D0) to pin 3 on the Arduino and the board's analog signal (A0) to pin A0 on the Arduino.

KY-024	Arduino
A0	A0
G	GND
+	5V
D0	3



[click to enlarge](#)



### KY-024 Example Code

The following Arduino sketch will read values from both digital and analog interfaces on the KY-02. The digital interface will turn on the Arduino's LED when a magnetic field is detected.

The analog interface starts at an initial value determined by the input voltage and the potentiometer. This value will increase or decrease depending on the intensity and polarity of the magnetic field.

```

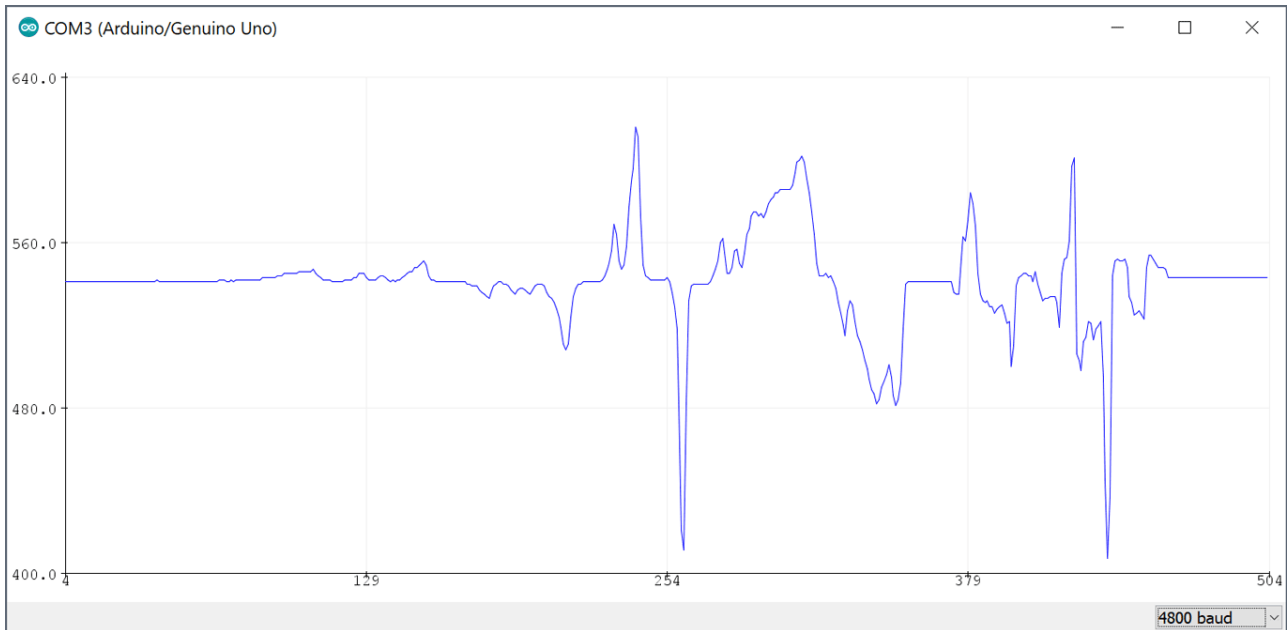
1  int led = 13 ; // LED on arduino
2  int digitalPin = 3; // linear Hall magnetic sensor digital interface
3  int analogPin = A0; // linear Hall magnetic sensor analog interface
4  int digitalVal ; // digital readings
5  int analogVal; // analog readings
6
7  void setup ()
8  {
9      pinMode (led, OUTPUT);
10     pinMode (digitalPin, INPUT);
11     //pinMode(analogPin, INPUT);
12     Serial.begin(9600);
13 }
14
15 void loop ()
16 {
17     // Read the digital interface
18     digitalVal = digitalRead(digitalPin) ;
19     if (digitalVal == HIGH) // When magnetic field is present, Arduino LI
20     {
21         digitalWrite (led, HIGH);
22     }
23     else
24     {
25         digitalWrite (led, LOW);
26     }
27
28     // Read the analog interface
29     analogVal = analogRead(analogPin);
30     Serial.println(analogVal); // print analog value
31
32     delay(100);
33 }

```

Setting analog pin as input (line 11) is not necessary, the `analogRead()` function will automatically set the pin as analog input when used.

Use **Tools > Serial Plotter** on the Arduino IDE to visualize the changes on intensity and polarity of the magnetic field.





## Downloads

**Fritzing Part: KY-024 Linear Magnetic Hall Sensor Module.**

- **SS49E Hall-effect linear sensor datasheet.**
- **LM393 datasheet.**

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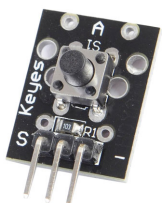
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