

3-Axis Magnetic Field Compass Sensor ARD2-2130

- Detect twists & turns on X, Y & Z axes
- Use as a magnetic field sensor or digital compass

Description

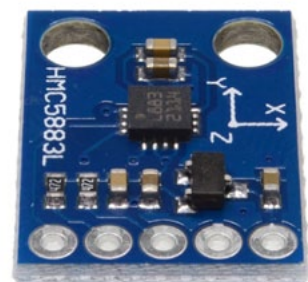
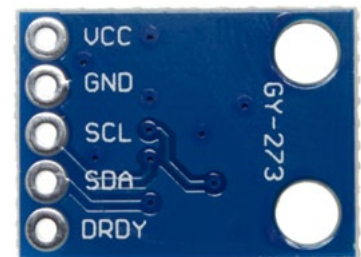
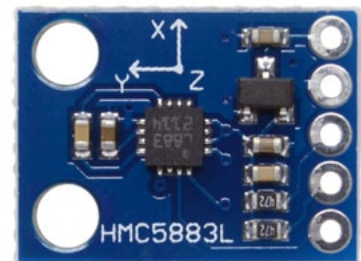
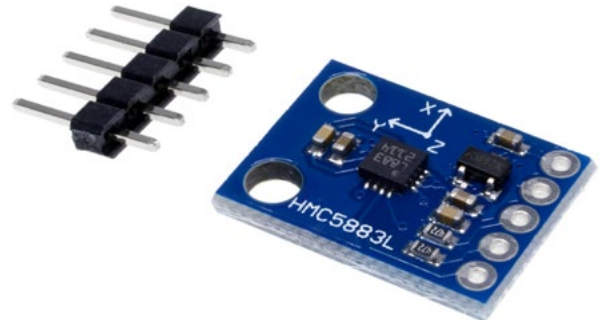
This module allows you to add an electronic compass to your DIY projects. It communicates with your Arduino board via I2C connection. The HMC5883L sensor is sensitive to Earth's magnetic fields in 3 axes, so that twisting or turning the device will alter its output values.

Specifications

Power Supply	3.0–5.0VDC
Chip	HMC5883L
Means of communication	IIC communication protocol
Measuring Range	±1.3–8.0 Gaussian
Dimensions	13.9mm x 18.5mm
Operating Temperature	–40°C ~ +150°C
Output Frequency	220Hz Max.

Pinout

Module	Arduino	Function
VCC	5V	Power Supply
GND	GND	Ground Connection
SCL	A5	Analog Output
SDA	A4	Analog Output
DRDY		Data Ready, Interrupt Pin. Internally pulled high. Optional connection.



Test Code

```
// Resources/Libraries:
// https://github.com/adafruit/Adafruit_Sensor
// https://github.com/adafruit/Adafruit_HMC5883_Unified

#include <Wire.h> //I2C Arduino Library

#define addr 0x1E //I2C Address for The HMC5883

void setup() {

  Serial.begin(9600);
  Wire.begin();

  Wire.beginTransmission(addr); //start talking
  Wire.write(0x02); // Set the Register
  Wire.write(0x00); // Tell the HMC5883 to Continuously Measure
  Wire.endTransmission();
}

void loop() {

  int x,y,z; //triple axis data

  //Tell the HMC what regist to begin writing data into
  Wire.beginTransmission(addr);
  Wire.write(0x03); //start with register 3.
  Wire.endTransmission();

  //Read the data.. 2 bytes for each axis.. 6 total bytes
  Wire.requestFrom(addr, 6);
  if(6<=Wire.available()){
    x = Wire.read()<<8; //MSB  x
    x |= Wire.read(); //LSB  x
    z = Wire.read()<<8; //MSB  z
    z |= Wire.read(); //LSB  z
    y = Wire.read()<<8; //MSB  y
    y |= Wire.read(); //LSB  y
  }

  // Show Values
  Serial.print("X Value: ");
  Serial.println(x);
  Serial.print("Y Value: ");
  Serial.println(y);
  Serial.print("Z Value: ");
  Serial.println(z);
  Serial.println();

  delay(500);
}
```

Source: henrysbench.capnfatz.com/henrys-bench/arduino-sensors-and-input/arduino-gy-273-hmc5883l-magnetometer-compass-tutorial/