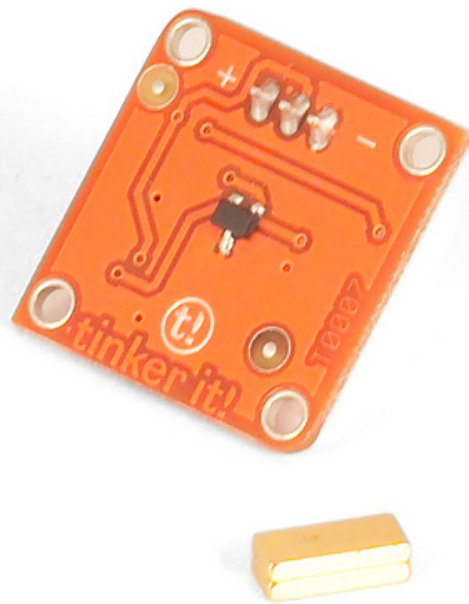# Arduino TinkerKit Hall Sensor

Overview

A Hall sensor creates a voltage related to the magnetic field around the sensor. This can be used to detect distance from a nearby magnet. Hall sensors can also be used to detect the magnetic field induced in a wire or coil.

Output: This module outputs 5v when a magnetic field (e.g. a human body) is close to the sensor, and roughly 0v when there is nothing nearby. When connected to an input on the Arduino using the TinkerKit Shield, you can see values between 0 (no presence) and 1023 (presence detected).

Module description: An Hall Sensor is mounted on a standard TinkerKit board; on the back of the module you can find a signal amplifier, a green LED that signals that the module is correctly powered and a yellow LED whose brightness depends on the values output by the module.

NB: There are exposed electrical contacts on the sensor surface - be careful to not touch the board with metallic objects, you may cause a short.

This module is a **SENSOR**. The connector is an **OUTPUT** which must be connected to one of the **INPUT** connectors on the **TinkerKit Shield**.

Code Example

```
/*
Analog input, digital output, serial output

Reads an analog input pin; T000070 Hall Sensor connected to I0 reacts
to the magnet direction and uses the result to light up a T010111 LED
Module connected on O0.
Also prints the value of the Hall Sensor to the serial monitor.

created on 7 Dec 2010
by Davide Gomba

This example code is in the public domain.

*/

#define O0 11
#define O1 10
#define O2 9
#define O3 6
#define O4 5
#define O5 3
#define I0 A0
#define I1 A1
#define I2 A2
#define I3 A3
#define I4 A4
#define I5 A5

// These constants won't change. They're used to give names
// to the pins used:
const int analogInPin = I0; // Analog input pin that the Hall Sensor is
attached to
const int digitalOutPin= O0; // Digital output pin that the LED is
attached to

int sensorValue = 0; // value read from the Linear pot

void setup() {
// initialize serial communications at 9600 bps:
Serial.begin(9600);
pinMode(digitalOutPin, OUTPUT);
}

void loop() {
// read the analog in value:

sensorValue = analogRead(analogInPin);
```

```
if (sensorValue < 505) { // notice that the normal value of the sensor is
510
digitalWrite(digitalOutPin, HIGH);
} else {
digitalWrite(digitalOutPin, LOW);
}
// print the results to the serial monitor:
Serial.print("Hall Sensor Value = " );
Serial.println(sensorValue);

// wait 10 milliseconds before the next loop
// for the analog-to-digital converter to settle
// after the last reading:
delay(10);
}
```