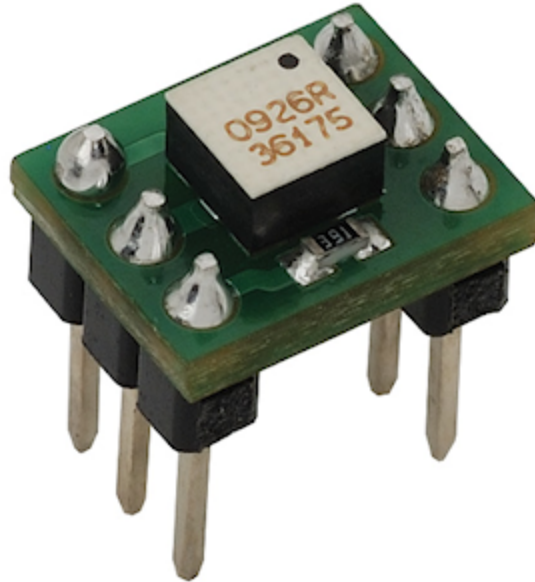
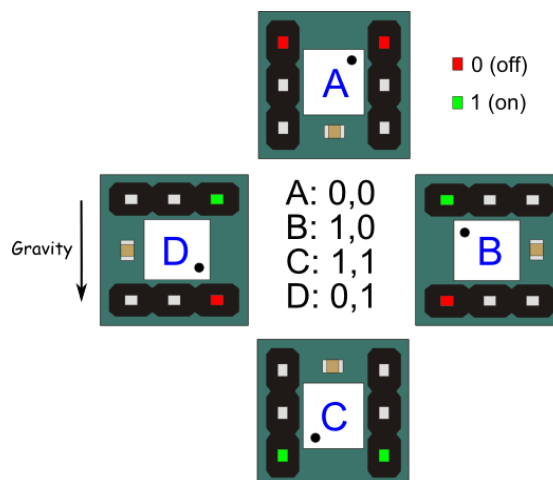


## 4 Directional Tilt Sensor



The 4-Directional Tilt Sensor indicates rotational position. Two digital (on/off) outputs indicate which side of the sensor is pointing down: the top, bottom, left, or right. The tilt sensor is an economical alternative to more expensive accelerometers, when precise angular feedback isn't necessary.

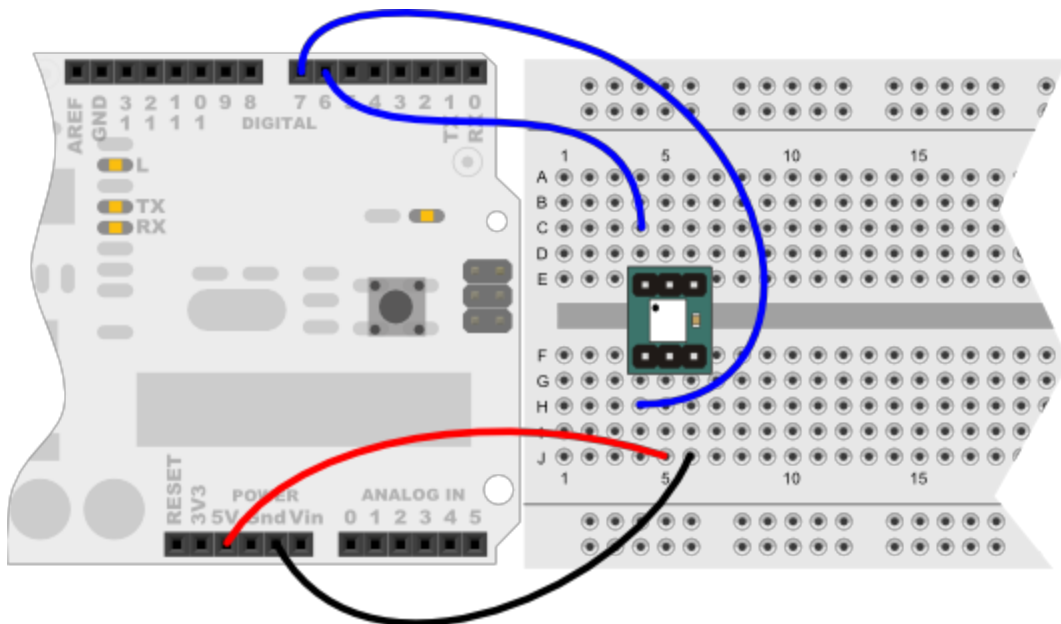
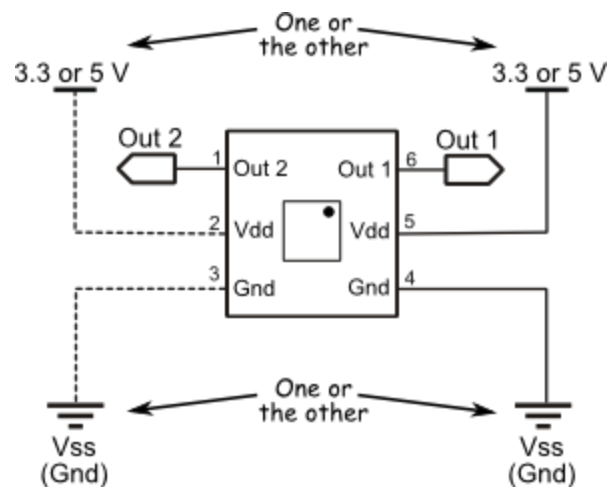
The sensor provides two independent outputs, labeled *Out 1* and *Out 2*, which together indicate which side of the device (top, bottom, left, right) is facing the ground. Inside the 4-Directional Tilt Sensor is a small captive ball that alternately blocks or allows light to strike a pair of photodetectors. Because this ball is sensitive to both gravity and very fast motion, the tilt sensor is best when attached to stationary or slower-moving objects.



## Hardware Setup:

**NOTE:** use the little dot on top of the sensor to make sure you are making the right connections!

- connect **Arduino's 5V** to pin **5** of the sensor and Arduino's **GND** to pin **4**.
- connect **Arduino digital pin 6** to the tilt sensor's pin **6**
- connect **Arduino digital pin 7** to the tilt sensor's pin **1**



## Code:

- Input the following code in your Arduino sketch and upload it to the board.
- Open the Serial console and check what values get printed.
- Move and tilt your sensor to see how the values changes.

```
void setup() {  
  // initialize serial communication:  
  Serial.begin(9600);  
}  
  
void loop()  
{  
  Serial.print("Photo 1: ");  
  Serial.print(digitalRead(6), DEC); // Display Out 1st value  
  Serial.print("; ");  
  Serial.print("Photo 2: ");  
  Serial.println(digitalRead(7), DEC); // Display Out 2nd value  
  
  delay(250); // Wait ¼ second  
}
```

**Q:** How many combinations of values can you obtain with this sensor?

>> rewrite the code so that we can read in our Serial console which kind of tilt state we are in! You can use “top”, “bottom”, “left” and “right” or make up your own specific messages.

you have 10 minutes from the moment you read THIS!

so if you read this before class you have probably failed.

just kidding.