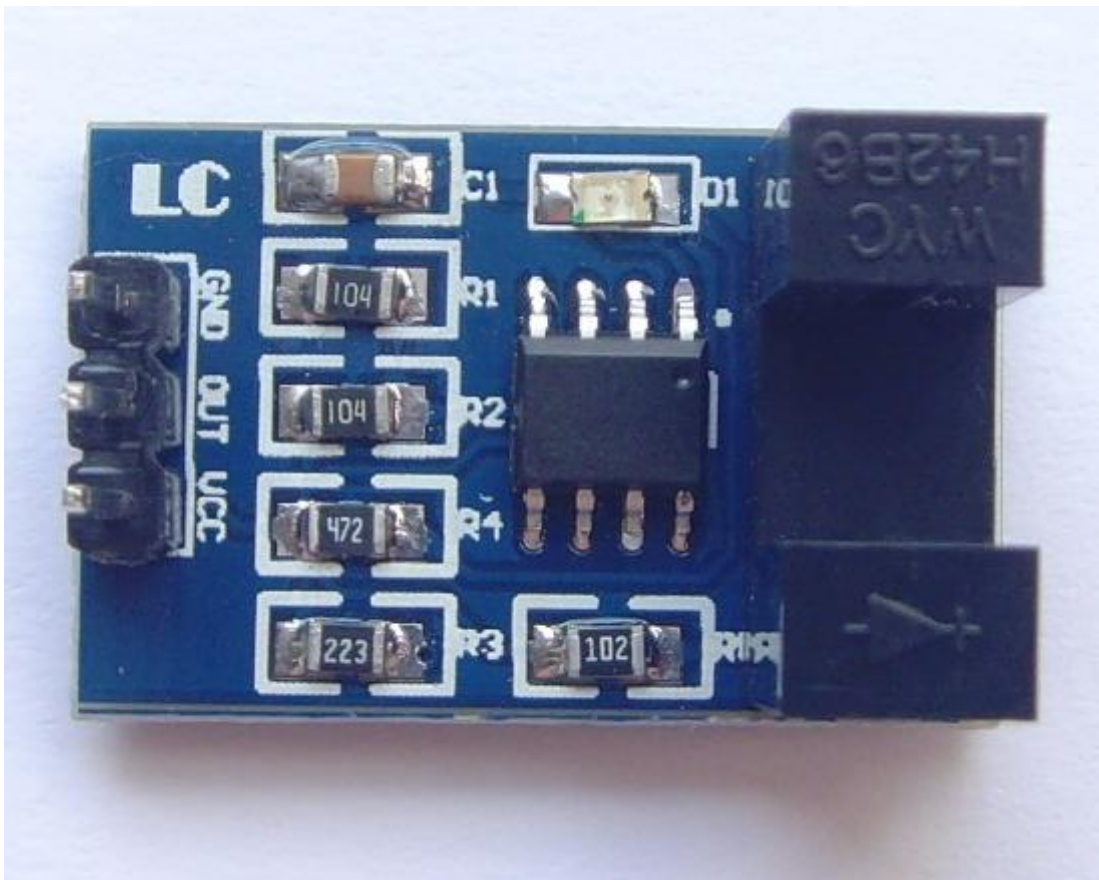# Photoelectric Counter Module


General Description:

Photoelectric sensors detect objects that pass between the two arms. Because the emitter and receiver are built into the same enclosure, optical axis alignment is not necessary for accurate detection. These U-shaped photoelectric sensors are suitable for positioning; cut-off mark and paper feed sensing needs.

Photoelectric sensors are designed for optimum value and sensing performance in a wide range of manufacturing applications. They provide a variety of optical styles and electrical configurations in small, easy-to-use, economical packages. With high speed and the ability to work with many types of sensors, these devices are ideal for controlling batch size, material length-cutting, punch/drill machinery and gas/liquid flow applications.

Specifications:

- Onboard LM393 voltage comparators and a photoelectric counting sensor chip
- Supports 5V/3.3V input voltage
- On-board signal output indicator
- Can be used for counting, motor speed etc
- Detection distances: Range from 5mm up to 50mm
- Single and dual beam options
- +/- 0.1 - 0.2mm repeatability
- Nothing detected: Output low, LED on
- Obstruction between the emitter and receiver: Output high, LED off
- PCB size: 24 (mm) x15 (mm)
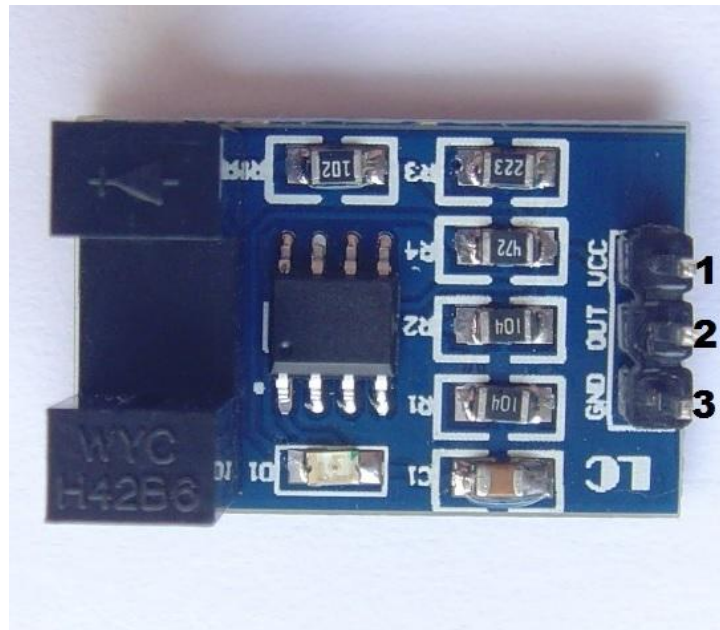
Pin Configuration:

1. VCC
2. Output
3. Ground

Schematic Diagram:
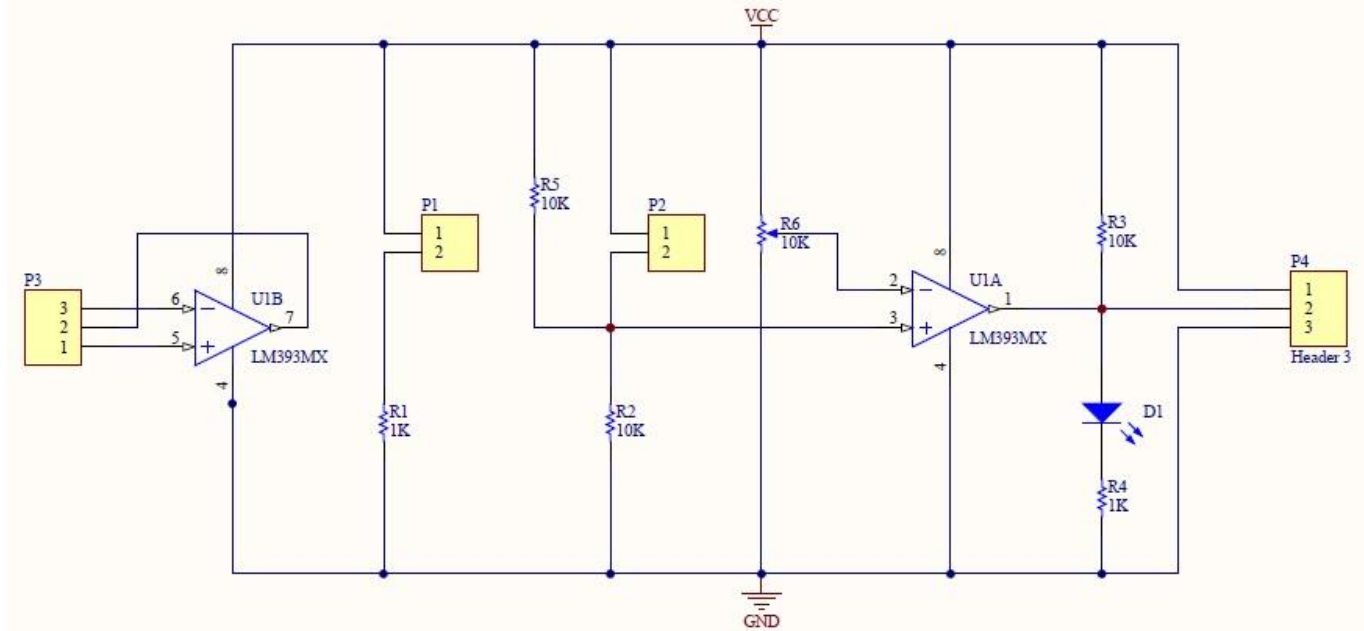
How to test:

1. Connect your Arduino microcontroller to the computer.
2. Connect the VCC pin of your module to the to the 5V pin of your Arduino.
3. Connect the GND pin of your module to the GND pin of your Arduino.
4. Connect the Output pin of your module to the A0 pin of you Arduino.
5. Enter this program to your Arduino Integrated Development Environment (IDE):
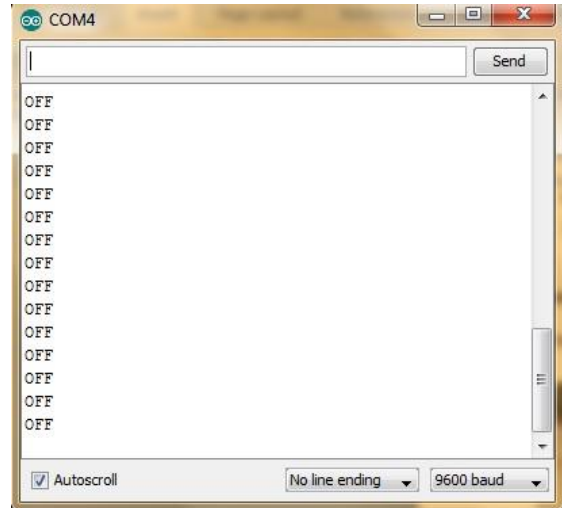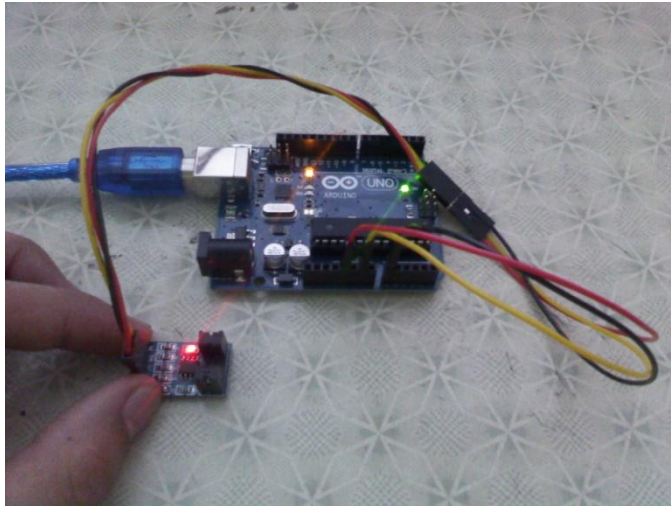
```
void setup()
{
    Serial.begin(9600);
}

void loop()
{
   if (analogRead(A0) > 10) Serial.println("ON");
   else Serial.println("OFF");
   delay(100);
}
```

6. Click the Upload Button
7. Lastly, click the Serial Monitor button.

Testing Results:

In the sample sketch we used the Photoelectric Counter Module as a switch. The figure below shows the output when there is no barrier:

When blocked with a ruler: