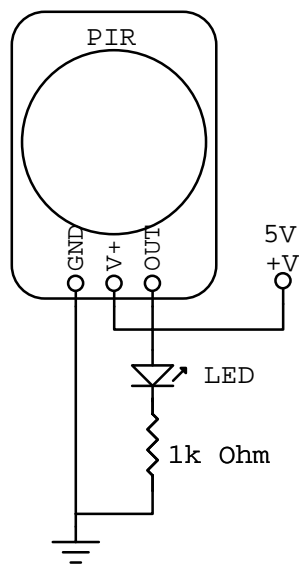


Thank-you for purchasing the Passive InfraRed (PIR) Motion Detector. This sensor is easily used in any electronic design. Only three connections are required, Power, Ground and Signal. The sensor system includes a Fresnel lense, a pyroelectric sensor, and a controller IC all mounted on a 25mm x 35mm printed circuit board.

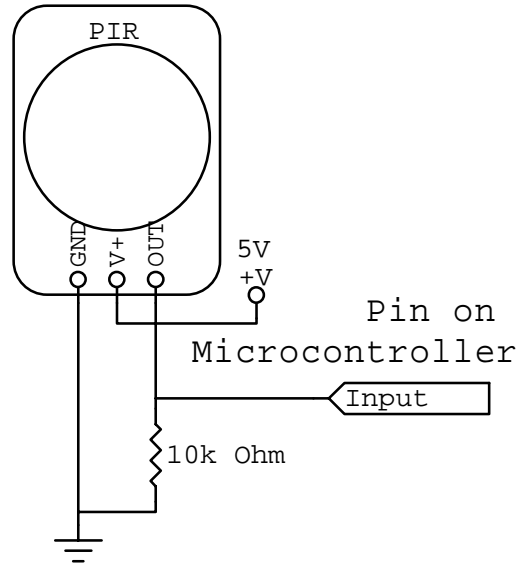
### **Using the PIR Motion Detector**

After you connect the detector to power and ground it takes approximately one minute for the sensor to fully stabilize. When the sensor detects an object it will give a positive pulse for approximately 1 second.

The quickest and easiest way to try the PIR is by connecting an LED and a current limiting resistor to the sensor.



Quick Test



Attaching to Microcontroller

### **Background Information**

The pyroelectric sensor combines a crystal and a filter to produce an electric charge when exposed to infrared radiation. Some ferroelectric materials will spontaneously develop a charge when the temperature of the material is changed. Any change in the incident radiation can change the temperature of a crystal material. This type of material is affected by a wide range of radiation. The filter is used to select a range of radiation that is associated with the human body's natural radiation.

There are two sensing regions on the device. This arrangement cancels signals caused by the ambient conditions like sunlight or room temperature. A body passing in front of the sensor will activate first one and then the other element whereas other sources will affect both elements simultaneously.

The module uses an IC and various components to control the sensor. The IC cancels any noise and sets the timing for the output signal. The voltage applied to the sensor is controlled by various components on the PCB. All you need to provide is +5V and Ground.

**Specifications**

|                    |                 |
|--------------------|-----------------|
| Operating Voltage  | 5 Vdc           |
| Stand By Current   | 350µA           |
| Output Signal      | TTL High Level  |
| Dimension          | 25 x 35 x 18 mm |
| Lens               | Ball Lens       |
| Detection Angle    | 60°             |
| Detection Distance | 5m              |

**Technical Support**

| Symptom                  | Probable Cause(s) / Solution(s)  |
|--------------------------|--|
| LED doesn't light at all | -No power. Connect +5 to +30 VDC<br>-Resistor (#2 in Figure 1) is missing. Install resistor. |
| LED stays on to long     | -This is a configuration set by the IC   |

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