Sound Impact Sensor (#29132)

The Sound Impact Sensor provides a means to add noise control to your project and responds to loud noises such as a clap of the hands. Through the on-board microphone, this sensor detects changes in decibel level, which triggers a high pulse to be sent through the signal pin of the sensor. This change can be read by an I/O pin of any Parallax microcontroller.

Features

- Detection range up to 3 meters away
- On-board potentiometer provides an adjustable range of detection
- Single bit active-high output
- 3-pin SIP header ready for breadboard or through-hole projects
- Built-in series resistor for compatibility with the Propeller microcontroller and other 3.3 V devices

Key Specifications

- Power requirements: 5 VDC
- Communication: Single bit high/low output
- Operating temperature: 32 to 158 °F (0 to +70 °C)
- Dimensions: 0.6 x 1.5 in (1.5 x 3.8 cm)

Application Ideas

- Noise Activated Alarm Systems
- Holiday Animated Props
- Robotic Control

Pin Definitions

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>2</td>
<td>5V</td>
<td>5 VDC</td>
</tr>
<tr>
<td>3</td>
<td>SIG</td>
<td>Signal Pin</td>
</tr>
</tbody>
</table>

Connection Diagrams

For use with the included sample programs on page 2.

Sensitivity

The Sound Impact Sensor has a maximum detection range of 3 meters. However, if you plan to use this sensor in an area where environmental factors can trigger false readings, the range can be shortened by adjusting the potentiometer on the front of the board.
Source Code
These programs are available from the Sound Impact Sensor product page. Browse to [www.parallax.com](http://www.parallax.com) and “Search” for 29132.

**BASIC Stamp® 2 Program**
This program will display the current state of the output pin from the Sound Impact Sensor connected to P0 using the Debug Terminal included in the BASIC Stamp Editor software, available for download from [www.parallax.com/basicstampsoftware](http://www.parallax.com/basicstampsoftware).

```
' {$STAMP BS2}
' {$PBASIC 2.5}
DO
  IF IN0 = 1 THEN
    DEBUG HOME, "Sound detected!", CLREOL ' When noise detected, display
    PAUSE 1000 ' a message
  ELSE
    DEBUG HOME,"All is well", CLREOL ' If no sound is detected,
  ENDIF
  PAUSE 10 ' display that all is well.
  LOOP ' Short delay
```

**Propeller™ P8X32A Application**
This program will display the current state of the output pin from the Sound Impact Sensor connected to P0 using the Parallax Serial Terminal. Note: This application uses the Parallax Serial Terminal.spin object for displaying the state of the sensor. This object as well as the Parallax Serial Terminal itself is installed with the Propeller Tool v1.2.6 which is available from the Downloads link at [www.parallax.com/Propeller](http://www.parallax.com/Propeller).

```
{{ SoundImpactSensor_Simple.spin
Displays the current state of the output pin from the Sound Impact Sensor connected to P0 using the Parallax Serial Terminal. For P8X32A. }}
CON
_clkmode = xtal1 + pll16x
_xinfreq = 5_000_000
OBJ
pst : "Parallax Serial Terminal"

PUB Main
  dira[0]~ ' Set pin 0 to input
  pst.Start(115_200) ' Set Parallax Serial Terminal to 115,200 baud

  repeat
    if ina[0] == 1
      pst.Str(string("Sound detected!"))) ' When noise is detected, display a message
      waitcnt(clkfreq + cnt)
      pst.Clear ' Wait 1 second
      pst.Clear ' Clear the Parallax Serial Terminal
    else
      pst.Str(string("All is well."))) ' If no sound detected, display all is well
      waitcnt(clkfreq/10 + cnt)
      pst.Home ' Wait 1/10 of a second
      pst.Home ' Move cursor to the top left corner of the PST
```

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