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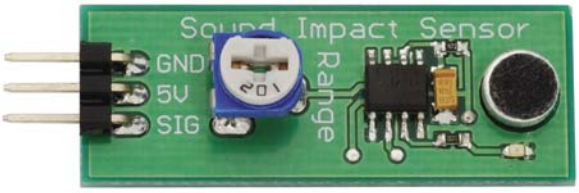
Sound Impact Sensor (#29132)

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

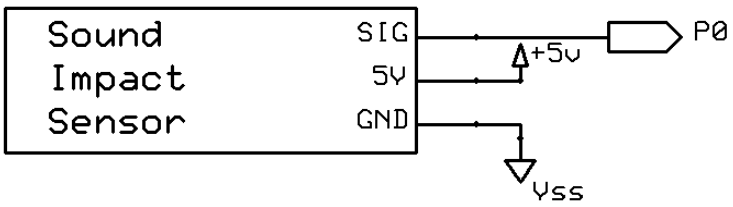
- Noise Activated Alarm Systems
- Holiday Animated Props
- Robotic Control

Pin Definitions

Pin	Name	Function
1	GND	Ground
2	5V	5 VDC
3	SIG	Signal Pin

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 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.

```
' {$STAMP BS2}
' {$PBASIC 2.5}

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

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.

```
{{ 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                      ' System clock → 80 MHz
_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)                   ' 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)                ' Wait 1/10 of a second
      pst.Home                                 ' Move cursor to the top left corner of the PST
```

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