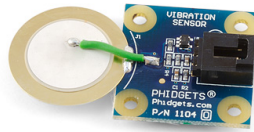


1104 User Guide



Go to this device's product page ^[1]

Getting Started

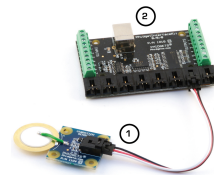
Checking the Contents

You should have received: **In order to test your new Phidget you will also need:**

- A Vibration Sensor
- A PhidgetInterfaceKit 8/8/8
- A Sensor Cable
- A USB Cable

Connecting the Pieces

1. Connect the Vibration Sensor to the Analog Input 6 on the PhidgetInterfaceKit 8/8/8 board using the sensor cable.
2. Connect the PhidgetInterfaceKit to your PC using the USB cable.



Testing Using Windows 2000 / XP / Vista / 7

Make sure you have the current version of the Phidget library installed on your PC. If you don't, follow these steps:

1. Go to the Quick Downloads section on the Windows page
2. Download and run the Phidget21 Installer (32-bit, or 64-bit, depending on your system)
3. You should see the **Ph** icon on the right hand corner of the Task Bar.

Running Phidgets Sample Program

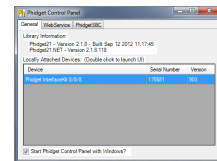
Double clicking on the **Ph** icon loads the Phidget Control Panel; we will use this program to ensure that your new Phidget works properly.

The source code for the **InterfaceKit-full** sample program can be found in the quick downloads section on the C# Language Page. If you'd like to see examples in other languages, you can visit our Languages page.

Updating Device Firmware

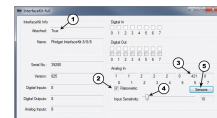
If an entry in this list is red, it means the firmware for that device is out of date. Double click on the entry to be given the option of updating the firmware. If you choose not to update the firmware, you can still run the example for that device after refusing.

Double Click on the  icon to activate the Phidget Control Panel and make sure that the **Phidget InterfaceKit 8/8/8** is properly attached to your PC.



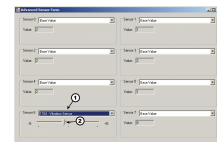
Double Click on Phidget InterfaceKit

1. 8/8/8 in the Phidget Control Panel to bring up InterfaceKit-full and check that the box labelled Attached contains the word True.
2. Make sure that the Ratiometric box is Ticked.
3. Lightly touch the sensor disk and you will see the Analog In value fluctuate between 0 and 1000.
4. You can adjust the input sensitivity by moving the slider pointer.
5. Click on the Sensors button to bring up the Advanced Sensor Form.



1. In the Sensor 6 box, select the 1104 - Vibration Sensor from the drop down menu.
2. The motion of the sensor is represented here.

Note: This sensor is designed to only measure the presence of acceleration and vibration



Testing Using Mac OS X

1. Go to the Quick Downloads section on the Mac OS X page
2. Download and run the Phidget OS X Installer
3. Click on System Preferences >> Phidgets (under Other) to activate the Preference Pane
4. Make sure that the Phidget InterfaceKit 8/8/8 is properly attached.
5. Double Click on Phidget InterfaceKit 8/8/8 in the Phidget Preference Pane to bring up the InterfaceKit-full Sample program. This program will function in a similar way as the Windows version.

Using Linux

For a step-by-step guide on getting Phidgets running on Linux, check the Linux page.

Using Windows Mobile / CE 5.0 / CE 6.0

For a step-by-step guide on getting Phidgets running on Windows CE, check the Windows CE page.

Technical Details

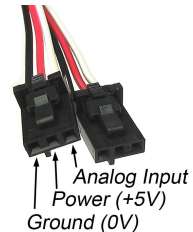
This sensor buffers a piezoelectric transducer. As the transducer is displaced from the mechanical neutral axis, bending creates strain within the piezoelectric element and generates voltages. If the assembly is supported by its mounting points and left to vibrate "in free space" the device will behave as a form of vibration sensor. The sensing element should not be treated as a flexible switch, and is not intended to be bent.

SensorValue 500 roughly corresponds to 0g acceleration. Acceleration will deflect the sensing element up or down, causing SensorValue to swing either way. This sensor is not meant to measure precise acceleration and vibration - use it to detect an acceleration impulse, or the presence of vibration.

Other Interfacing Alternatives

If you want maximum accuracy, you can use the `RawSensorValue` property from the `PhidgetInterfaceKit`. To adjust a formula, substitute `(SensorValue)` with `(RawSensorValue / 4.095)`. If the sensor is being interfaced to your own Analog to Digital Converter and not a Phidget device, our formulas can be modified by replacing `(SensorValue)` with `(Vin * 200)`. It is important to consider the voltage reference and input voltage range of your ADC for full accuracy and range.

Each Analog Input uses a 3-pin, 0.100 inch pitch locking connector. Pictured here is a plug with the connections labelled. The connectors are commonly available - refer to the Analog Input Primer for manufacturer part numbers.



API

Phidget analog sensors do not have their own API- they simply output a voltage that is converted to a digital value and accessed through the "Sensor" properties and events on the `PhidgetInterfaceKit` API. It is not possible to programmatically identify which sensor is attached to the Analog Input. To an `InterfaceKit`, every sensor looks the same. Your application will need to apply formulas from this manual to the **SensorValue** (an integer that ranges from 0 to 1000) to convert it into the units of the quantity being measured. For example, this is how you would use a temperature sensor in a C# program:

```
// set up the interfacekit object
InterfaceKit IFK = new InterfaceKit();

// link the new interfacekit object to the connected board
IFK.open("localhost", 5001);

// Get sensorvalue from analog input zero
int sensorvalue = IFK.sensors[0].Value;

// Convert sensorvalue into temperature in degrees Celsius
double roomtemp = Math.Round(((sensorvalue * 0.22222) - 61.11), 1);
```

See the `PhidgetInterfaceKit` User Guide for more information on the API and a description of our architecture.

For more code samples, find your preferred language on the [Languages](#) page.

Product History

Date	Board Revision	Device Version	Comment
September 2005	0	N/A	Product Release
May 2008	0A	N/A	Redesign due to component obsolescence

References

[1] http://www.phidgets.com/products.php?product_id=1104

Article Sources and Contributors

1104 User Guide *Source:* http://www.phidgets.com/wiki/index.php?title=1104_User_Guide *Contributors:* Burley, Mparadis

Image Sources, Licenses and Contributors

Image:1104.jpg *Source:* <http://www.phidgets.com/wiki/index.php?title=File:1104.jpg> *License:* unknown *Contributors:* Mparadis

File:1104_0_Connecting_The_Hardware.jpg *Source:* http://www.phidgets.com/wiki/index.php?title=File:1104_0_Connecting_The_Hardware.jpg *License:* unknown *Contributors:* Mparadis

File:Ph.jpg *Source:* <http://www.phidgets.com/wiki/index.php?title=File:Ph.jpg> *License:* unknown *Contributors:* Mparadis

File:1018_2_Control_Panel_Screen.jpg *Source:* http://www.phidgets.com/wiki/index.php?title=File:1018_2_Control_Panel_Screen.jpg *License:* unknown *Contributors:* Mparadis

File:Sensor InterfaceKit Screen 421.jpg *Source:* http://www.phidgets.com/wiki/index.php?title=File:Sensor_InterfaceKit_Screen_421.jpg *License:* unknown *Contributors:* Mparadis

File:1104_0_Advanced_Sensor_Form_Screen.jpg *Source:* http://www.phidgets.com/wiki/index.php?title=File:1104_0_Advanced_Sensor_Form_Screen.jpg *License:* unknown *Contributors:* Mparadis

File:Analoginput.jpg *Source:* <http://www.phidgets.com/wiki/index.php?title=File:Analoginput.jpg> *License:* unknown *Contributors:* Mparadis