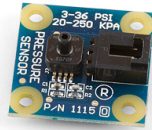# 1115 User Guide

Go to this device's product page [1]

Getting Started

### Checking the Contents

You should have received:

- A gas pressure sensor
- A sensor cable

In order to test your new Phidget you will also need:

- A PhidgetInterfaceKit 8/8/8 or PhidgetTextLCD
- A USB cable

Connecting the Pieces

1. Connect the Gas Pressure Sensor to the Analog Input 6 on the PhidgetInterfaceKit 8/8/8 using the sensor cable.
2. Connect the PhidgetInterfaceKit to your PC using the USB cable.
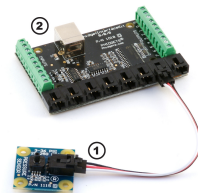
Testing Using Windows 2000 / XP / Vista / 7

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 icon on the right hand corner of the Task Bar.

Running Phidgets Sample Program

Double clicking on the 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If an entry in this list is red, it means the firmware for that device is out of date.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.
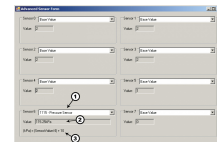
Double Click on the ![Ph] icon to activate the Phidget Control Panel and make sure that the **Phidget InterfaceKit 8/8/8** is properly attached to your PC.
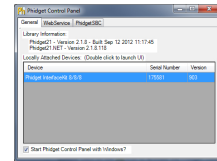
1. Double Click on **Phidget InterfaceKit 8/8/8** in the Phidget Control Panel to bring up InterfaceKit-full and check that the box labelled Attached contains the word True.
2. Make sure that the Ratiometric box is Ticked.
3. The number in the Analog In box gives you the current air pressure in the room. The value of 421 in the picture above correspond to 115.25 kilopascals.
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.
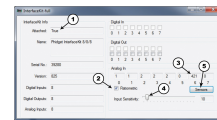
1. In the Sensor 6 box, select the 1115 - Pressure Sensor from the drop down menu.
2. The gas pressure measured by the sensor is shown here.
3. Formula used to convert the analog input SensorValue into pressure.

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 is properly attached.
5. Double Click on in the Phidget Preference Pane to bring up the 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

Measures absolute gas pressure from 20 to 250 kPa. The sensor can safely withstand pressures beyond 250 kPa, but it will saturate and report 250 kPa for any value above. The sensor will not be physically damaged by pressure until approximately 1000 kPa.

Note: If you are interested in the difference in pressure between two points (Atmospheric vs. Human lungs for example) this sensor would not be appropriate. The gas pressure sensor required for this type of application is referred to as differential.

Formulas

The Formula to translate SensorValue into Pressure is:

$$\text{Pressure (in kPa)} = \frac{\text{SensorValue}}{4} + 10$$

Barometric Temperature Correction

This sensor reports the absolute pressure of its surroundings. In other words, the pressure compared to a perfect vaccum. If you plan on using this sensor as a barometer, you need to convert to barometric pressure. You can use conversion calculators such as this Above Sea Level Barometer Reading Correction Calculator [2] to make the adjustment based on your location's elevation.

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.

Analog Input
Power (+5V)
Ground (0V)
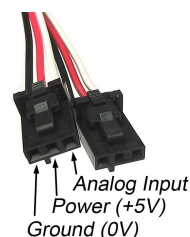
API

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:

```csharp
// 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
August 2005	0	N/A	Using MPXA4250 sensor
October 2007	0	N/A	Using MPXA6250 sensor

References

[1] http://www.phidgets.com/products.php?product_id=1115

[2] http://www.csgnetwork.com/barcorrecthcalc.html

Article Sources and Contributors

1115 User Guide *Source*: http://www.phidgets.com/wiki/index.php?title=1115_User_Guide *Contributors*: Burley, Mparadis

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