1103 User Guide

Go to this device's product page [1]

Getting Started

Checking the Contents

You should have received:

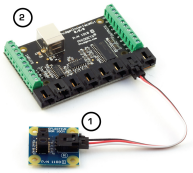
- An IR Reflective Sensor 10cm
- A Sensor Cable

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

- A Phidget InterfaceKit 8/8/8
- A USB Cable

Connecting the Pieces

1. Connect the IR Reflective Sensor 10cm to the AnalogInput 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 icon on the right hand corner of the Task Bar.

Running Phidgets Sample Program

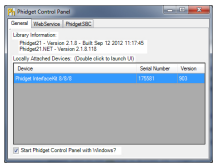
Double clicking on the icon loads the Phidget Control Panel; we will use this program to ensure that your new Phidget works properly.

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

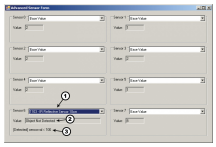
If an entry in this list is red, it means the firmware for that device is out of date. Double click on the entry to be given the option of updating the firmware. If you choose not to update the firmware, you can still run the example for that device after refusing.

Double Click on the 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. Move an object in front of the sensor. The sensor value changes from 1000 (or some number close to 1000) to 0 as soon as the object comes within a distance of 10cm. When the object is more than 10cm away, the value goes back to 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 1103 - IR Reflective Sensor 10cm from the drop down menu.
2. Shows detection of the object as it gets closed than 10cm from the 1103.
3. Formula used to convert the analog input SensorValue into detection/non-detection.



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 can detect the presence of an object at 10cm. This sensor does not rely on the reflective properties of the surface of the object. The sensor cannot detect the presence of the object if it is emitting large amounts of light, such as a light bulb.

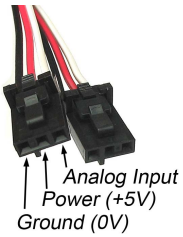
The sensor will not detect objects that are more than 10cm away, but will detect objects that are closer than 10cm. When an object is in the line of sight of the sensor at a distance of 10cm or closer, the sensor value will decrease from 1000 to 0. Once the object leaves the line of sight, the value is restored to 1000.

The IR sensor works just as well in both dim and well lit areas. You may have trouble using this sensor through a pane of glass, since the IR light can easily reflect off of the surface of the glass.

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
March 2006	0 [2]	N/A	Product Release
April 2010	1 [3]	N/A	New Sensor Chip mounted vertically on board (sensor faces up)

References

[1] http://www.phidgets.com/products.php?product_id=1103
[2] http://www.phidgets.com/products.php?product_id=1103_0
[3] http://www.phidgets.com/products.php?product_id=1103_1

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