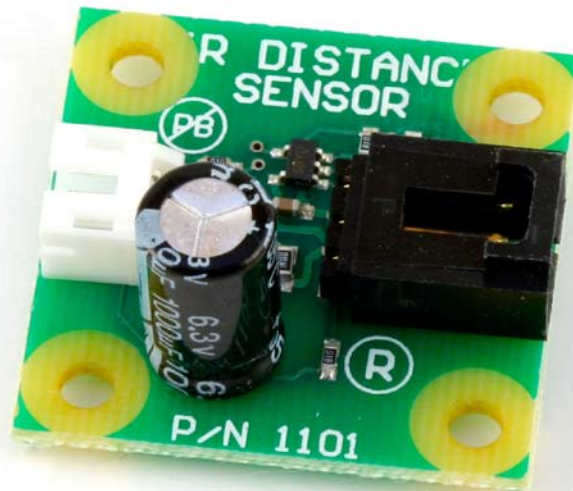


## IR Distance Sensor



**The Distance Sensor measures distances from 70 cm to 10 cm.**

**The Distance Sensor is designed to interface the Sharp GP2D12 sensor to the PhidgetInterfaceKit 8/8/8 or the PhidgetTextLCD.**

### **Examples:**

You will find program examples in the download section of [www.phidgets.com](http://www.phidgets.com)

## Getting Started

### Installing the hardware

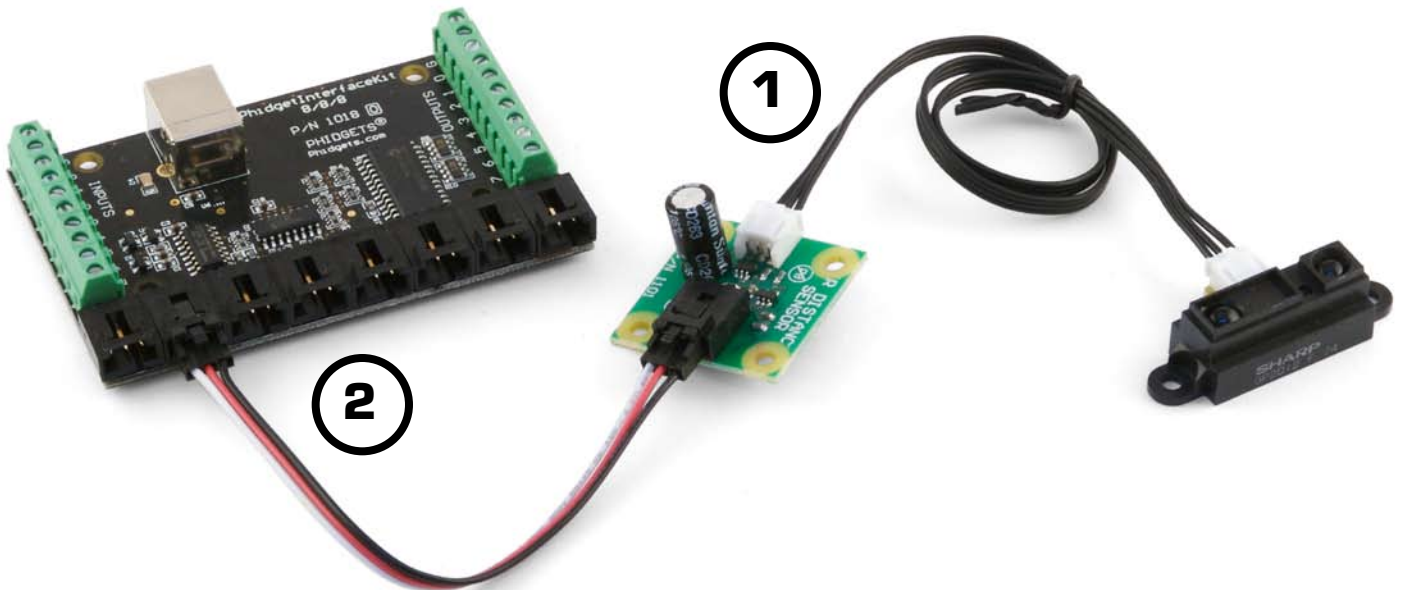
The kit contains:

- A Distance Sensor Board
- A 60cm Sensor Cable
- A Sensor Cable for connecting the GP2D12

You will also need:

- A Sharp GP2DE12IR Distance Detector
- A PhidgetInterfaceKit 8/8/8 or a PhidgetTextLCD
- A USB cable

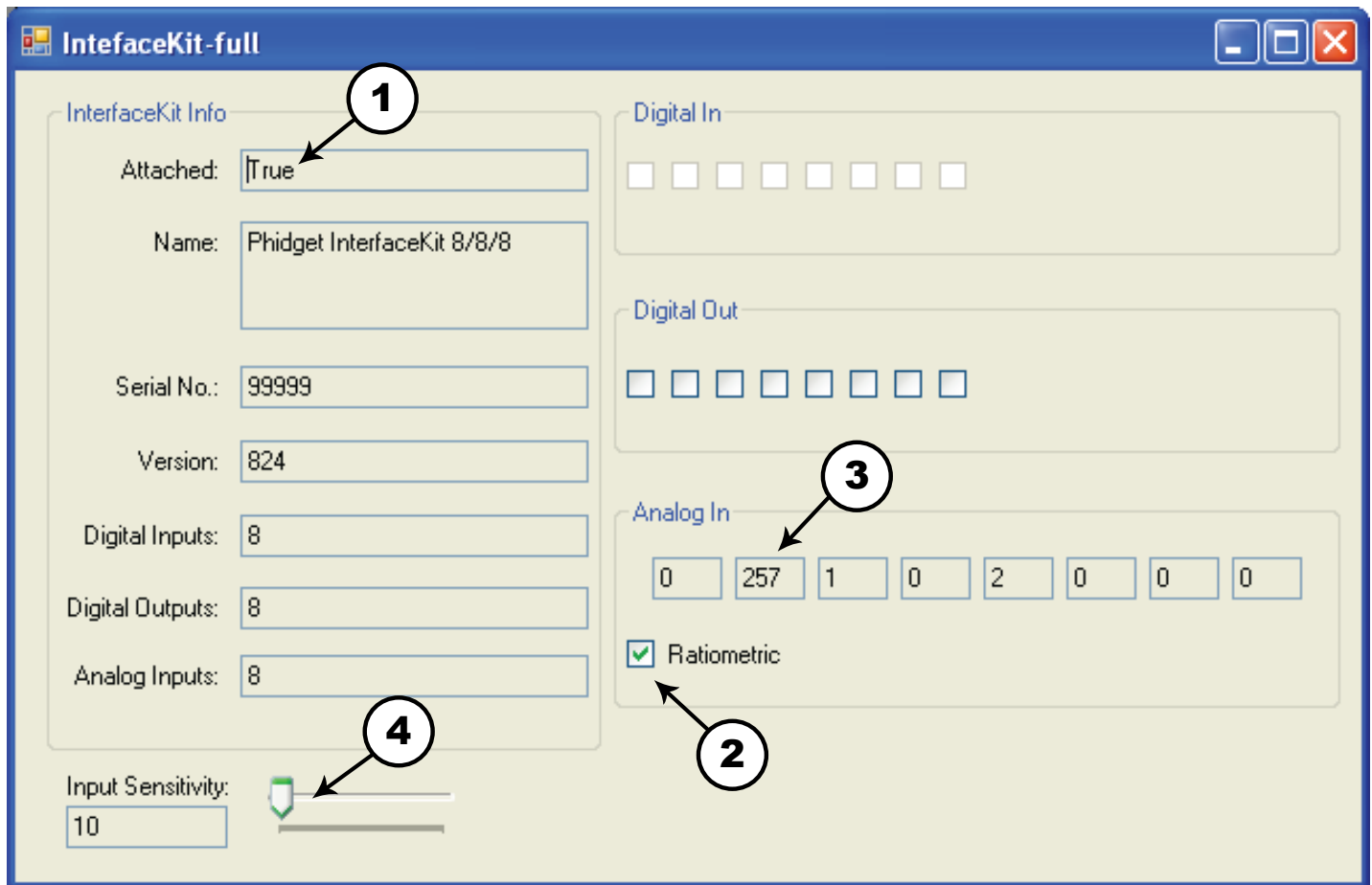
### Connecting all the pieces



1. Connect the GP2DE12IR to the Distance Sensor Board.
2. Connect the Distance Sensor Board to an Analog Input on the PhidgetInterfaceKit 8/8/8 board using the sensor cable.

## Testing the IR Distance Sensor using Windows

Run the program **InterfaceKit-full**.



1. Run the program **InterfaceKit-full** and check that the box labelled Attached contains the word True.
2. Make sure that the Ratiometric box is Ticked.
3. Put an object in front of the IR Sensor (the sensor measures distances from 10 to 70cm) and check that you get a number between 0 (at 10cm) and 500 (at 70cm).
4. You can adjust the input sensitivity by moving the slider pointer.

## Technical Information

The Distance Sensor measures distances from 70 cm to 10 cm. Sensor values from 0 to approximately 500 are produced, the output being approximately inversely proportional to the distance. Because the Distance Sensor can draw up to 300 mA for short periods of time, this board acts as a power filter. Up to eight Sharp GP2D12 sensors can be attached to the PhidgetInterfaceKit 8/8/8 at the same time.

The Formula to translate SensorValue into Distance is:

$$\text{Distance (cm)} = [(\text{SensorValue}/1000) \times -120] + 70$$

To translate RawSensorValue into Distance:

$$\text{Distance (cm)} = [(\text{RawSensorValue}/4095) \times -120] + 70$$

If you are using a generic Analog to Digital Converter (not a Phidget device):

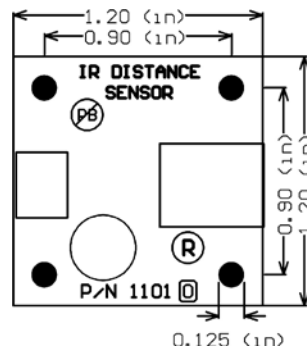
$$\text{Distance (cm)} = \{[\text{Measured Value} / (\text{Max ADC Range} - 1)] \times -120\} + 70$$

## Device Specifications

|                     |         |
|---------------------|---------|
| Current Consumption | 26mA    |
| Output Impedance    | 1K ohms |

## Mechanical Drawing

1:1 scale



## Product History

| Date         | Product Revision | Comment         |
|--------------|------------------|-----------------|
| October 2005 | n/a              | Product Release |