# PhidgetInterfaceKit 8/8/8

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# Getting Started

Welcome to the 1018 user guide! In order to get started, make sure you have the following hardware on hand:

- 1018 Phidget InterfaceKit
- USB cable and computer
- something to use with the 1018 (e.g. LEDs, switches, analog sensors, etc)

Next, you will need to connect the pieces:



- 1. Connect any sensors to the voltage inputs on the 1018.
- 2. Connect the 1018 InterfaceKit to the computer using a USB cable.
- 3. Connect a switch or a piece of wire connecting ground to one of the digital input terminals.
- 4. Connect an LED to one of the Digital Outputs by inserting the long LED wire into the digital output 0 and the shorter wire into Ground.

Now that you have everything together, let's start using the 1018!

# **Testing Using Windows**

#### Phidget Control Panel

In order to demonstrate the functionality of the 1018, the Phidget Control Panel running on a Windows machine will be used.

The Phidget Control Panel is available for use on both macOS and Windows machines.

#### Windows

To open the Phidget Control Panel on Windows, find the picon in the taskbar. If it is not there, open up the start menu and search for Phidget Control Panel



#### macOS

To open the Phidget Control Panel on macOS, open Finder and navigate to the Phidget Control Panel in the Applications list. Double click on the **(D)** icon to bring up the Phidget Control Panel.

For more information, take a look at the getting started guide for your operating system:

- Getting started with Windows
- Getting started with macOS

Linux users can follow the getting started with Linux guide and continue reading here for more information about the 1018.

#### First Look

After plugging the 1018 into your computer and opening the Phidget Control Panel, you will see something like this:

| D Phidget Control Panel              | -        | - 0     | ×         |
|--------------------------------------|----------|---------|-----------|
| File Help                            |          |         |           |
| Phidgets Network Service PhidgetSBCs |          |         |           |
| Name                                 | Serial # | Channel | Version   |
| E- 	Ŷ PhidgetInterfaceKit 8/8/8      | 324781   |         | 904       |
| i– Digital Inputs                    | 324781   |         |           |
| - Digital Input                      |          | 0       |           |
| - Digital Input                      |          | 1       |           |
| - Digital Input                      |          | 2       |           |
| - Digital Input                      |          | 3       |           |
| - Digital Input                      |          | 4       |           |
| - Digital Input                      |          | 5       |           |
| - Digital Input                      |          | 6       |           |
| Digital Input                        |          | 7       |           |
| Digital Outputs                      | 324781   |         |           |
| Voltage Inputs                       | 324781   |         |           |
| ⊡-Voltage Ratio Inputs               | 324781   |         |           |
| Double Click to launch Ul            |          | Log     | <u>15</u> |

The Phidget Control Panel will list all connected Phidgets and associated objects, as well as the following information:

- Serial number: allows you to differentiate between similar Phidgets.
- Channel: allows you to differentiate between similar objects on a Phidget.
- Version number: corresponds to the firmware version your Phidget is running. If your Phidget is listed in red, your firmware is out of date. Update the firmware by double-clicking the entry.

The Phidget Control Panel can also be used to test your device. Double-clicking on an object will open an example.

#### Voltage Input

Double-click on a Voltage Input object in order to run the example:

| Voltage Input  | —  |
|--|--|
| Phidget Info<br>Attached: 1010/1018/1019 - PhidgetInterfaceKit | : 8/8/8  |
| Version: 904 Serial Number: 408375<br>Channel: 0               | REMOTE   |
| Settings<br>Change Trigger: 0.000V                             | Data<br>Voltage: 0 V                                 |
| Data Interval:   | Sensor Type: Generic voltage sensor<br>Sensor Value: |

General information about the selected object will be displayed at the top of the window. You can also experiment with the following functionality:

- Modify the change trigger and/or data interval value by dragging the sliders. For more information on these settings, see the data interval/change trigger page.
- If you have an analog sensor connected that you bought from us, you can select it from the Sensor Type dropdown menu. The example will then convert the voltage into a more meaningful value based on your sensor, with units included, and display it beside the Sensor Value label. Converting voltage to a Sensor Value is not specific to this example, it is handled by the Phidget libraries, with functions you have access to when you begin developing!

#### Voltage Ratio Input

Double-click on a Voltage Ratio Input object in order to run the example:

| Voltage Ratio Inpu                 | t                             |                | _               |             | ×   |
|------------------------------------|-------------------------------|----------------|-----------------|-------------|-----|
| Phidget Info<br>Attached: 1010/101 | .8/1019 - PhidgetInterfaceKit | 8/8/8          |                 |             | 100 |
| Version: 904<br>Channel: 0         | Serial Number: 408375         |                | REMOTE          |             |     |
| Settings                           |                               | Data           |                 |             |     |
| Change Trigger:                    | 0.000V/V                      | Voltage Ratio: | 0 V/V           |             |     |
| Data Interval:                     | 233ms                         | Sensor Type:   | Generic ratiome | tric sensor | ~   |

General information about the selected object will be displayed at the top of the window. You can also experiment with the following functionality:

- The voltage ratio is reported in Volts per Volt. For example, if the Phidget is providing 5V and the sensor is sending back 2.5V, the ratio will be 0.5V/V.
- Modify the change trigger and/or data interval value by dragging the sliders. For more information on these settings, see the data interval/change trigger page.
- If you have an analog sensor connected that you bought from us, you can select it from the Sensor Type drop-

down menu. The example will then convert the voltage into a more meaningful value based on your sensor, with units included, and display it beside the Sensor Value label. Converting voltage to a Sensor Value is not specific to this example, it is handled by the Phidget libraries, with functions you have access to when you begin developing!

### Digital Input

Double-click on a Digital Input object in order to run the example:

| Digital I               | nput          |                     |               | 13 <u></u> |       | $\times$ |
|-------------------------|---------------|---------------------|---------------|------------|-------|----------|
| Phidget In<br>Attached: | fo<br>1010/10 | 18/1019 - PhidgetIn | terfaceKit 8/ | 8/8        | 8-8-1 |          |
| Version:<br>Channel:    | 904<br>1      | Serial Number:      | 408375        | REMOTE     |       |          |
| Data<br>State:          | Тл            | ue                  |               |            |       |          |

General information about the selected object will be displayed at the top of the window. You can also experiment with the following functionality:

• This is an active-low device, therefore, it will be true when connected to ground, and false when connected to a high voltage.

#### Digital Output

Double-click on a Digital Output object in order to run the example:

| Digital C                 | utput        |                               | -      |  |
|---------------------------|--------------|-------------------------------|--------|--|
| Phidget Info<br>Attached: | o<br>1010/10 | 18/1019 - PhidgetInterfaceKit | 8/8/8  |  |
| Version:<br>Channel:      | 904<br>0     | Serial Number: 408375         | REMOTE |  |
| Settings                  |              |                               |        |  |
|                           |              | Turn On                       |        |  |

General information about the selected object will be displayed at the top of the window. You can also experiment with the following functionality:

• Toggle the state of the digital output by pressing the button.

### **Technical Details**

If you want to know more about the input/output capabilities of the 1018 InterfaceKit, check the Digital Input Primer, InterfaceKit Digital Outputs page, and the Analog Input Primer.

# What to do Next

- Software Overview Find your preferred programming language here to learn how to write your own code with TOP Phidgets!
- General Phidget Programming Read this general guide to the various aspects of programming with Phidgets. Learn how to log data into a spreadsheet, use Phidgets over the network, and much more.
- Phidget22 API The API is a universal library of all functions and definitions for programming with Phidgets. Just select your language and device and it'll give you a complete list of all properties, methods, events, and enumerations that are at your disposal.