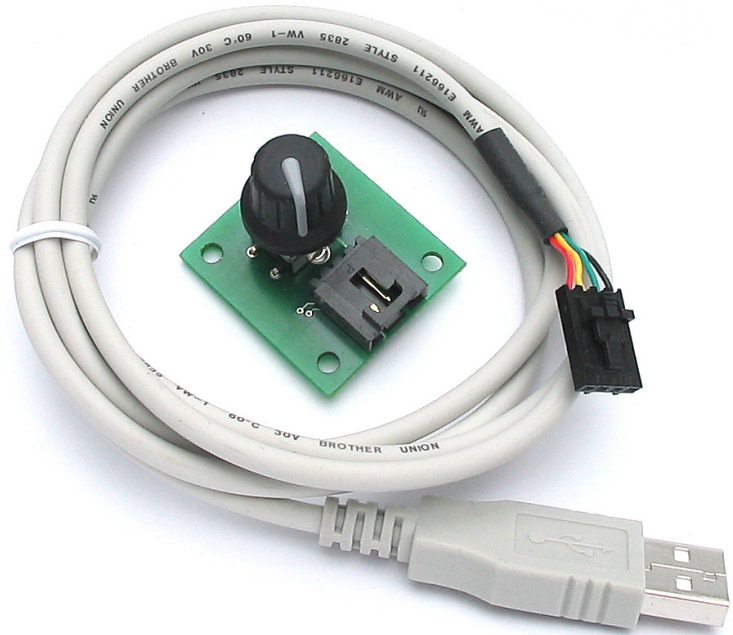


PhidgetEncoder

Phidgets are the most user-friendly system available for controlling and sensing the environment from your computer. People with absolutely no hardware knowledge or experience can include encoders into their projects. It is just a matter of plugging your PhidgetEncoder into the USB port on your computer. After that, you can use the simple to program Phidgets software libraries to access these devices.



The PhidgetEncoder uses a typical two-bit mechanical encoder with a built-in momentary-action pushbutton switch. It returns 80 counts for 360 degrees of rotation. With It you can:

- **Detect changes in incremental and absolute position.**
- **Easily track these changes with respect to time.**

The PhidgetEncoder can be controlled from Windows, Linux, and Mac OS X. High-level programming interfaces are available for Visual Basic, C, C++, Flash, .NET, Java, LabVIEW, etc.

What Can the PhidgetEncoder Do?

The PhidgetEncoder is intended to be used as a human interface, not as a device to measure shaft speed. Use it as a volume knob, and you can turn up your volume without limit!

Getting Started on Windows 2000 / XP

The PhidgetEncoder can be controlled from a variety of Software Development Environments. In Visual Basic the PhidgetEncoder software component provide a high-level programmer interface. Here is how to get started under Windows 2000 or Windows XP.

Step 1. What you need to have ready

- Your PhidgetEncoder.
- A USB cable.
- A computer running Windows 2000 or Windows XP.
- An Internet connection and a Web browser.

Step 2. Assemble your hardware

- Plug the flat end of the USB cable into the input connector on the PhidgetEncoder.
- Plug the rectangular end of the USB cable into the USB connector on your computer (you can do this at any time).

Step 3. Install the software

Phidgets use a library installed on your computer. This only has to be installed once no matter how many different types of Phidgets you have.

- Have you previously installed the Phidget library? If so, you can skip this step.
- To install the library go to www.phidgets.com >> Downloads >> Release.
- Select the PHIDGET.msi file.
- A dialog box will appear asking if you would like to open the file or save it to your computer. You can do either, but if you are unsure just select "Open" and follow the instructions.
- Do you want to update a previously installed Phidget library? If so, you must remove the old library when prompted to do so.

Step 4. Download the sample programs

- Go to www.phidgets.com >> Downloads >> Release.
- Select the Examples.zip file.
- Save the zip file to a place of your choosing, and then uncompress it.
- You will find many executables in the Visual Basic folder, and their source in the sub-folders.
- PhidgetMonitor.exe will show you what Phidgets are plugged in. If you have followed Step 2 and Step 3, a PhidgetEncoder should be displayed in the list, along with its serial number. The source for this .exe is in the PhidgetManagerExamples folder.
- All PhidgetEncoder samples have an "encoder" prefix. Try them! All source code can be found in the PhidgetEncoderExamples folder.

Step 5. Try Programming a Phidget

- Go to www.phidgets.com >> Documentation.
- Read the documentation for the PhidgetManager, the IPhidget, and read the documentation under the PhidgetEncoder heading.
- Based on this documentation, we recommend you examine the source of the sample programs mentioned in Step 4.
- Now try modifying the samples. Or code your own from scratch.

Step 6. Learning more ...

- Explore www.phidgets.com. We recommend you visit Projects and Examples to see what other people have done. For new applications or other programming languages visit the Forums.

Step 7. Read the license agreement

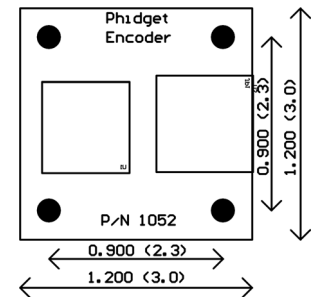
Go to www.phidgets.com >> Documentation and select the License link. Note that the term Phidget™ is trademarked, and that the name PhidgetEncoder is synonymous with Phidget™.

Hardware Description

The PhidgetEncoder uses a typical two-bit mechanical encoder with a built-in momentary-action pushbutton switch. It returns 80 counts for 360 degrees of rotation. With It you can:

- Detect changes in incremental and absolute position.
- Easily track these changes with respect to time.

The encoder that comes with the PhidgetEncoder is manufactured by CTS, part number 290UAA5F201B1.



Using Other Encoders

If you decide that this encoder does not meet your requirements it is possible to use other two-bit mechanical encoders. Optical encoders with large counts per revolution are not expected to work with this device. To change the encoder the user will have to carefully desolder and remove the existing encoder. For assistance on desoldering techniques we recommend using any search engine on the Web. Since your new encoder won't have exactly the same pin configuration, you should use wire to connect your new encoder to the appropriate pins on the PhidgetEncoder board.

We have tested the following encoders, and found that they can be used as replacements:

Manufacturer	Part number
CTS	290UAA5F201B2
CTS	290UAA5F201B1
CTS	288V232R161B2

Device Specification

Position Update Rate	Approx. 30 Hz
USB Current Consumption	100 mA