

Wheatstone Bridge Phidget



Bridge-based sensors are a common type of resistive sensor that produce a very small voltage drop. Load cells, strain gauges, pressure sensors, and piezoelectric sensors are all examples of sensors that usually operate in this way. In order to measure these tiny voltage changes, you need a Wheatstone bridge input. The Wheatstone Bridge Phidget uses a high-resolution ADC to read up to two of these signals and plugs into any **VINT port**. See the “Compatible Products” tab for a list of VINT Hubs.

Accurate and Adjustable

This board is equipped with a 24-bit analog to digital converter, resulting in accurate measurements at resolutions as high as $59.6 \mu\text{V/V}$. The bridge gain can be changed in software to 1, 2, 64, or 128, allowing you to get the best resolution for the range of the sensor you use. An error event will be launched whenever the measurement value saturates, so your program can dynamically change the gain when necessary.

Product Specifications

Board

Controlled By VINT

Number of Bridge Inputs 2

Bridge Inputs

Bridge Voltage Resolution 59.6 nV/V

Sampling Interval Max 60 s/sample

Sampling Interval Min 20 ms/sample

Bridge Current Max 50 mA

Input Voltage Limit Min Ground + 0.25V DC

Input Voltage Limit Max 5V Supply – 0.25V DC

Electrical Properties

Current Consumption Min 25 μ A

Current Consumption Max *bridge current plus 1.5 mA

Physical Properties

Recommended Wire Size 16 – 26 AWG

Operating Temperature Min -40 °C

Operating Temperature Max 85 °C

* – The extra 1.5mA of current consumption varies depending on the data interval selected. See the technical section of the User Guide for details. Additional gain-sensitive specifications can also be found there.

