

# VINT Hub Phidget



If you place an order with Phidgets, it's very likely you'll want a VINT Hub Phidget to tie it all together.

## Six Versatile I/O Ports

With a VINT Hub Phidget, you can interface six devices to your computer through a single USB port. Each VINT port can perform one of four roles: Communicating with an intelligent VINT Device, reading a 0-5V Voltage or ratiometric sensor, acting as a digital output, or reading switches as a digital input. Each port has a power and ground pin, so you can also use the ports to gain access to the USB voltage supply directly.

Plug in one of our many VINT-enabled Phidgets that perform a wide variety of functions. Control motors and LEDs, measure temperature or motion, or build a large scale system with many inputs and outputs.

## **Easy to Use**

VINT Devices are 'plug and program': automatically discovered by the Phidget API with the same ease of programming you've come to expect from Phidgets. Each VINT device has a full API with functions and events to make programming a snap.

## **Analog Sensor Compatible**

Sometimes, you just need a few simple analog voltage sensors. Luckily, your collection of Phidget Analog Input sensors is not obsolete; each port on the USB VINT Hub can interface a 0-5V sensor. The VINT Port is backwards compatible with both ratiometric and non-ratiometric Phidget analog sensors.

## **Digital I/O Mode**

In digital output mode, a VINT port can be used to drive LEDs, relays, digital circuits, and other simple electronics. Each port is PWM-enabled, allowing you to dim LEDs to a specific brightness.

Wire a switch or sensor contact directly into a VINT Port, and use the Digital Input mode to read the state of the switch.

If you need more than six inputs or outputs, you can expand by attaching a VINT I/O module. For example, there are VINT digital output modules with 16 outputs, allowing 96 digital outputs on a single VINT HUB Phidget!

## **Product Specifications**

## Board

|                      |                |
|----------------------|----------------|
| Controlled By        | USB (Mini-USB) |
| Number of VINT Ports | 6              |

## Electrical Properties

|                            |            |
|----------------------------|------------|
| USB Voltage Min            | 4.5 V DC   |
| USB Voltage Max            | 5.3 V DC   |
| USB Speed                  | High Speed |
| Current Consumption Min    | 32.5 mA    |
| Available External Current | 470 mA     |

## Voltage Inputs

|                          |                          |
|--------------------------|--------------------------|
| Voltage Input Resolution | * 16 bit                 |
| Sensor Input Impedance   | 324 k $\Omega$           |
| Input Voltage Min (DC)   | 0 V DC                   |
| Input Voltage Max (DC)   | 5 V DC                   |
| Voltage Input Noise      | $\pm 630 \mu\text{V}$ DC |
| Sampling Interval Max    | 60 s/sample              |
| Number of Voltage Inputs | 6 (Shared)               |
| Sampling Interval Min    | 1 ms/sample              |

## Digital Inputs

|                                 |                     |
|---------------------------------|---------------------|
| Pull-up Resistance              | 124 k $\Omega$      |
| Low Voltage Max (True)          | 1 V DC              |
| High Voltage Min (False)        | 1.8 V DC            |
| Low Voltage Trigger Length Min  | 3 ms                |
| High Voltage Trigger Length Min | 3 ms                |
| Digital Input Voltage Max       | 5.5 V DC            |
| Digital Input Type              | Switch (Active Low) |
| Number of Digital Inputs        | 6 (Shared)          |

## Digital Outputs

|                                  |              |
|----------------------------------|--------------|
| Series Resistance                | 510 $\Omega$ |
| Digital Output Available Current | 8.1 mA       |
| Digital Output Voltage Min       | 0 V DC       |
| Digital Output Voltage Max       | 3.3 V DC     |
| PWM Frequency Max                | 50 kHz       |
| PWM Resolution                   | 0.8 %        |
| Number of Digital Outputs        | 6 (Shared)   |

## Physical Properties

|                           |                        |
|---------------------------|------------------------|
| Operating Temperature Min | -40 $^{\circ}\text{C}$ |
| Operating Temperature Max | 85 $^{\circ}\text{C}$  |

\*Voltage measured with a 10-bit ADC, **oversampled** to 16-bits.

## Software Objects

| Channel Name                          | API               | Channel | Hub Port |
|---------------------------------------|-------------------|---------|----------|
| <b>Hub Port – Digital Input Mode</b>  |                   |         |          |
| Digital Input                         | DigitalInput      | 0       | 0 – 5    |
| <b>Hub Port – Digital Output Mode</b> |                   |         |          |
| Digital Output                        | DigitalOutput     | 0       | 0 – 5    |
| <b>Hub Port – Voltage Input Mode</b>  |                   |         |          |
| Voltage Input                         | VoltageInput      | 0       | 0 – 5    |
| <b>Hub Port – Voltage Ratio Mode</b>  |                   |         |          |
| Voltage Ratio Input                   | VoltageRatioInput | 0       | 0 – 5    |
| <b>6-Port USB VINT Hub Phidget</b>    |                   |         |          |
| VINT Hub                              | Hub               | 0       |          |