

# 4x Isolated Solid State Relay Phidget



When the 3.3V digital output mode of your VINT port is not enough, this output module adds four PWM-enabled solid state relay outputs to your system. Because it uses relay outputs, you can control more powerful devices that require up to 30V and 8A. LED strips, DC motors, power relays, fans and other small circuits are just a few examples of what can be controlled with this module. The REL1100 connects to a port on a **VINT Hub**. See the “Compatible Products” tab for a list of hubs.

## **Low-Side Switching**

Each solid state relay switches an external circuit to ground when enabled. This action allows completion of the circuit in order to power a load. The power to the load is supplied externally and should be connected in series with the load and the relay output. Alternatively, you could use a pull-up resistor on the input of your load and then switch the input to ground when you want it to turn off. Each channel has a ground terminal beside it to make wiring a snap, and each one leads to a common ground.

## **PWM Switching**

In addition to switching at microsecond speeds, each relay output is also capable of pulse-width modulation; rather than simply switching on or off, you can select a percentage duty cycle to limit the power being supplied to a specific level. This allows you to control devices like a dimmer would, which is an important feature for LEDs, fans, and motors. Check the datasheet for your device to ensure that it is designed to be used with PWM (some devices such as incandescent or CF bulbs are not designed for dimming).

## **Isolated for Stability**

The VINT port on this board is electrically isolated from the rest of the board, improving stability by eliminating ground loops.

## Product Specifications

### Board Properties

Controlled By VINT

### Electrical Properties

Current Consumption Min 3.5 mA

Current Consumption Max 4 mA

Load Voltage Max (DC) 30 V DC

Load Current Max (DC) 8 A

Switching Power Max (Real) \* 240 W

### Relay Properties

Number of Relays 4

Contact Resistance Max 35 m $\Omega$

Turn-off Time Max 100 ns

Switch Type SPST Normally Open MOSFET

Turn-on Time Max 100 ns

PWM Resolution 0.1 %

PWM Frequency Max 16 kHz

### Physical Properties

Recommended Wire Size 16 – 26 AWG

Operating Temperature Min -40  $^{\circ}$ C

Operating Temperature Max 85  $^{\circ}$ C

\* Note: At switching powers higher than 50W, external cooling may be required. For high power applications, a hockey-puck style SSR may be more appropriate. See the “Other Relays” tab for more details.

## Software Objects

| Channel Name            | API                | Channel |
|-------------------------|--------------------|---------|
| Digital Output Isolated | DigitalOutput0 – 3 |         |

