

# Phidgets® SSR Relay Board



The Solid State Relay is used to switch up to 2.5 Amps at up to 40 Volts DC, or 28 Volts AC.

The relay board is controlled by a digital output on any of the following Phidgets: the PhidgetTextLCD, the PhidgetInterfaceKit 8/8/8, and the PhidgetRFID v2.0 and greater

## Examples:

You will find program examples in the download section of [www.phidgets.com](http://www.phidgets.com)

## What Can the SSR Relay Board do?

The SSR Board allows any Phidget device with digital outputs to control larger loads and devices like AC or DC motors, electromagnets, solenoids, and incandescent light bulbs.

## Getting Started

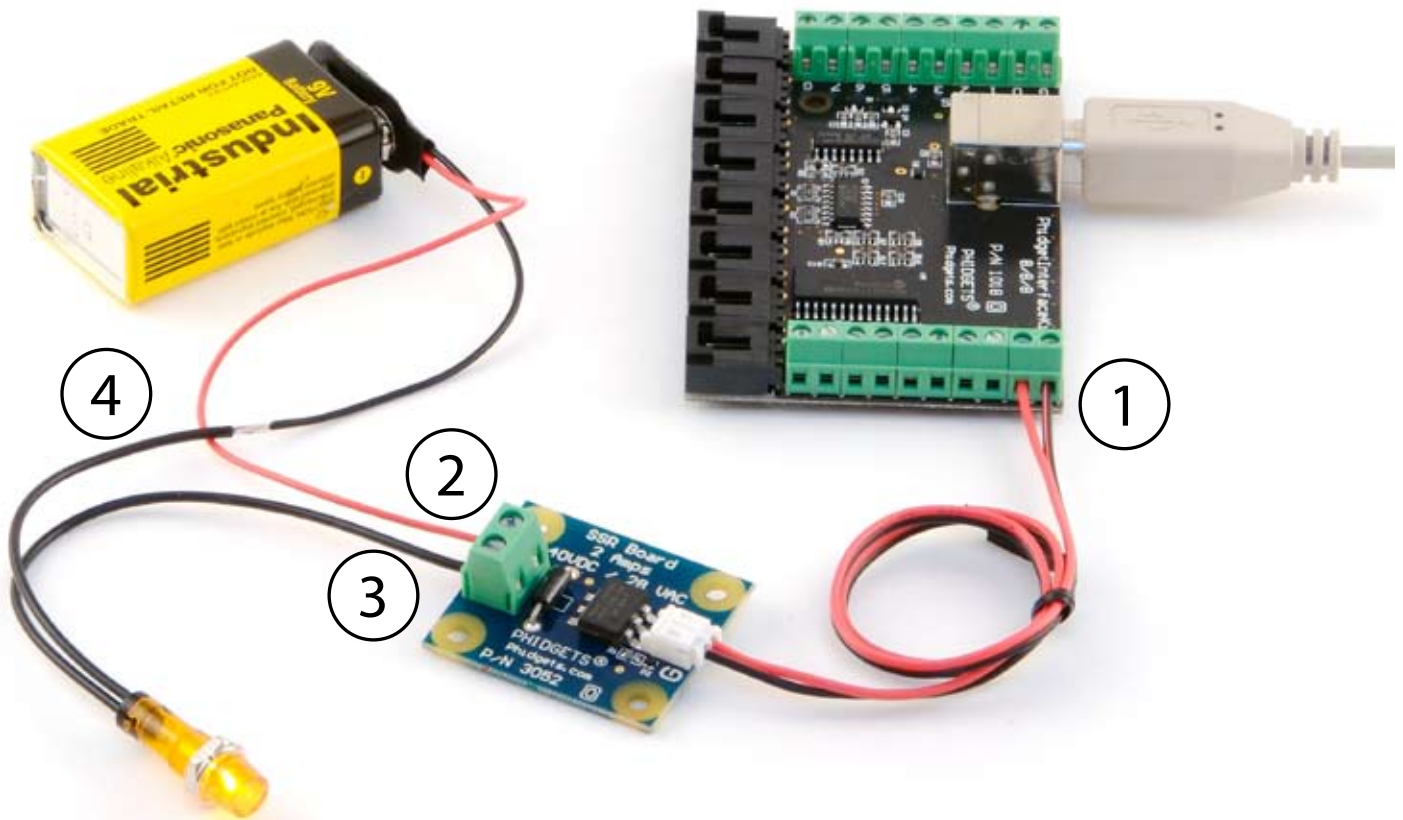
### Installing the hardware

The Kit contains:

- An SSR Relay board
- An SSR Relay connector cable

You will also need:

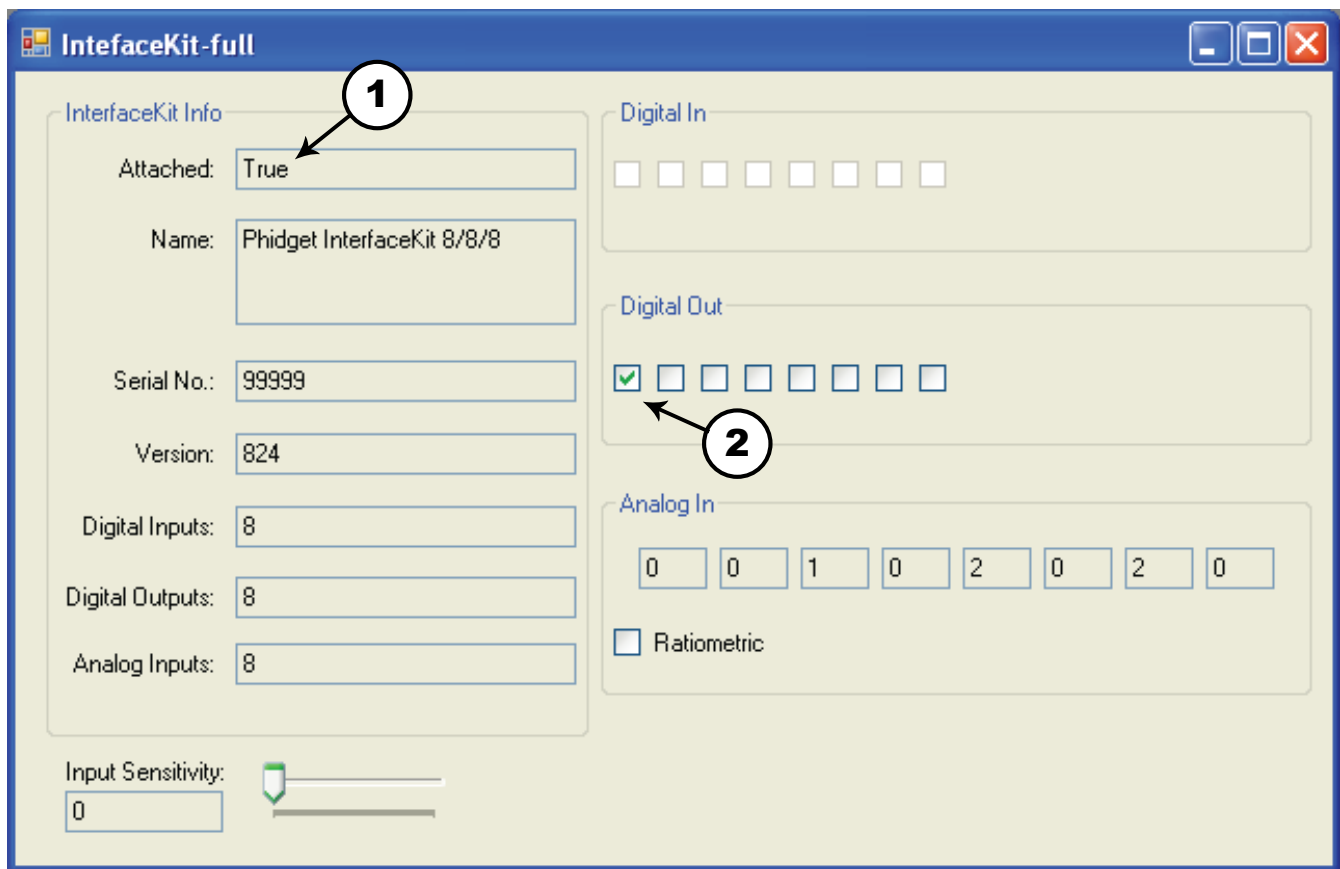
- A PhidgetTextLCD, a PhidgetInterfaceKit 8/8/8, or a PhidgetRFID v2.0 and greater
- A USB cable
- A 9V battery
- An incandescent bulb



1. Attach the SSR Board to your PhidgetInterfaceKit by connecting the positive (red) wire to a digital output and the ground (black) wire to any ground terminal on the InterfaceKit
2. Connect the positive lead from your power supply to one output terminal of the SSR Board
3. Connect the other output terminal of the SSR Board to one of the bulb wires.
4. Connect other bulb wire to the negative lead of your power supply

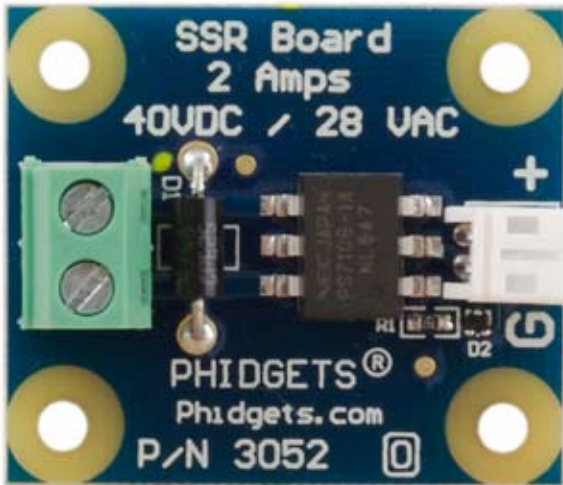
## Testing the SSR Relay using Windows

Run the Program **InterfaceKit-full**.



1. Run the program **InterfaceKit-full** and check that the box labelled Attached contains the word True.
2. Turn the bulb on and off by clicking on the Digital output box.

## Technical Information



### Solid State Relays

Solid State Relays, or SSRs, are devices designed to operate like standard relays but without mechanical motion. Built instead out of silicon and other solid state materials, SSRs allow currents and voltages to be switched by simple digital signals

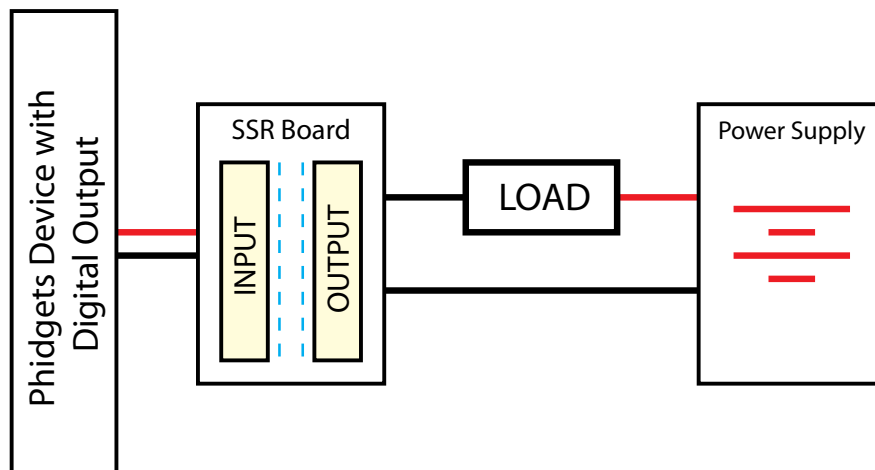
from a microprocessor or any other device that can supply the small amount of current needed to activate the SSR's internal switching mechanism.

### Protection Devices

The SSR Board is safe to use with sensitive control devices like microprocessors, and will not damage a Phidget device or your PC. Optoisolation between the control inputs and outputs of the SSR in the form of a GaAs LED paired with a set of optically-controlled MOSFETs provides protection from output to input. An on-board 47V bidirectional transistor across the relay output protects the board from static electricity and surges from inductive loads.

### Using the SSR Board

Using the SSR Relay Board in your application is typically done according to the following diagram, though there are other implementations for it as well.

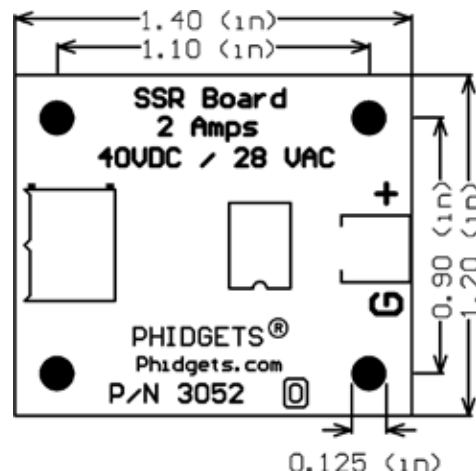


## Device Specifications

Output Contact On Resistance	0.05 ohms
Maximum DC Switching Voltage	40 VDC
Maximum AC Switching Voltage	28 VAC
Maximum Switching Current (AC or DC)	2.5A
Maximum Continuous Current (AC or DC)	2.5A
Maximum Pulsed Current (AC or DC, PW 100ms one shot)	5.0A
Maximum Switching Speed	20 cycles/second

## Mechanical Drawing

1:1 scale



## Product History

Date	Product Revision	Comment
October 2007	3052_0	Product Release