

Description

The Slice of Relay is a fully assembled add on board for the Raspberry Pi computer. It has 2 high power relays for switching external electrical circuits. The board plugs directly into the Pi's 26 way GPIO header and is controlled by I/O two pins. The pins can be altered to any other if desired.

The product is available with either 10 amp or (by special arrangement) 16 amp relays. The rating is marked on the body of the relay. The relays are rated at up to 250v AC.

MAINS USE should NEVER be attempted by anyone unfamiliar, not competent and not qualified. The whole board including Pi should be enclosed in an isolated enclosure. We accept no responsibility for misuse at any voltage, including mains. MAINS CAN KILL!

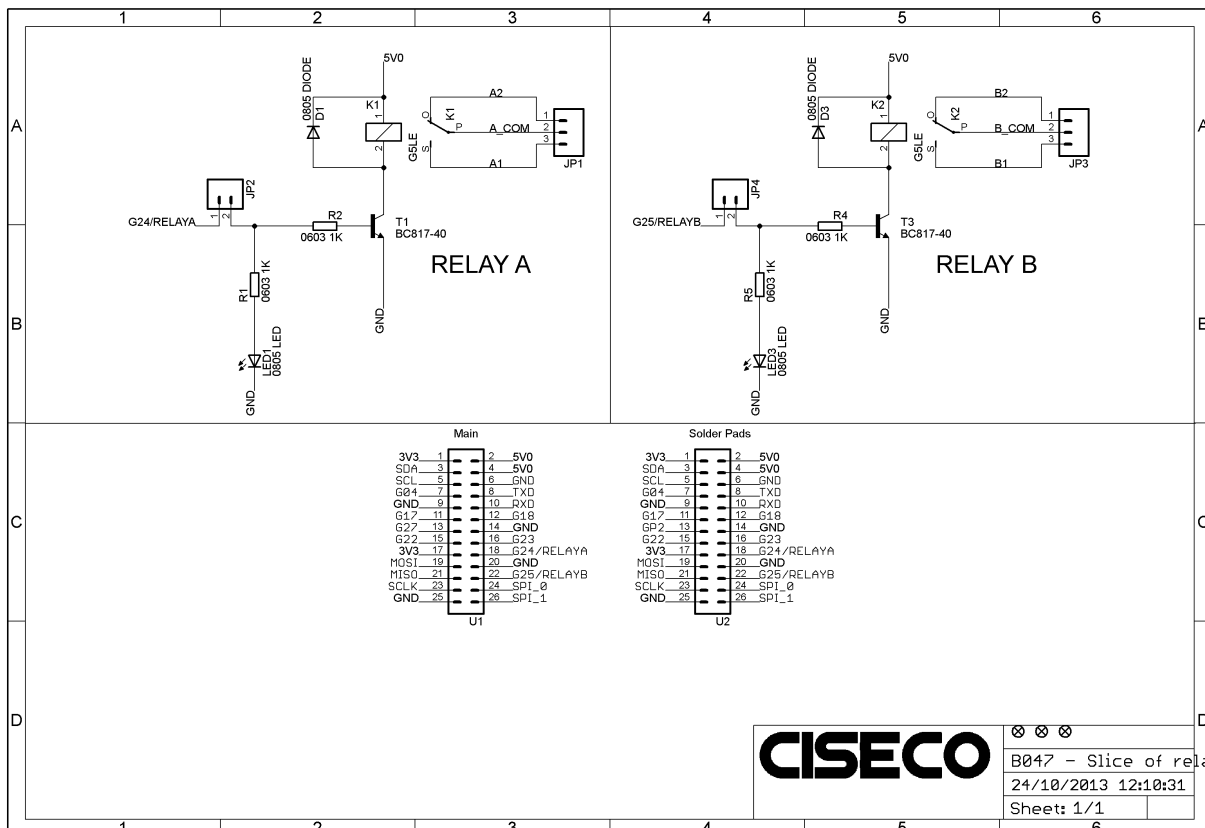
If you need to expand your GPIO header to support another connection, there are a second row of holes which you can solder to.



Features

- 2 high power relays
- 10 amp or 16 amp versions
- Up to 250v AC
- Economical
- LED indicators for both relays
- Can be run from any GPIO pin

Circuit schematic



Applications

- Switching large loads
- Web control of devices (berryIO is good example and worth a look) <http://frozenmist.co.uk/downloads/berryio/>
- Timer requirements
- Automation
- Irrigation
- Prototyping

Technical specs

Length:	55.5 mm
Width:	40.2 mm
Depth:	26 mm
Weight:	42 grams maximum
Supply voltage:	5v relays / 3.3v I/O
Current no relay on:	0ma
Current 1 relay on:	71ma @ 5v
Current 2 relays on:	137ma @ 5v

Software compatibility

We have had success with the two most common ways to control the I/O pins on the Raspberry Pi; RPi.GPIO and WiringPi.

We chose to use WiringPi in conjunction with WiringPi2Python for our example code.

<http://wiringpi.com/>

<https://github.com/Gadgetoid/WiringPi2-Python>

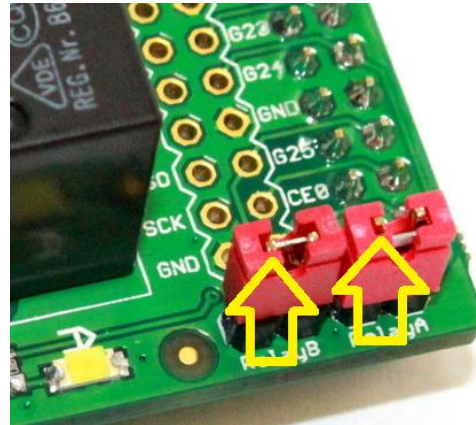
Pinouts

The table below indicates the pins used by default when the two jumpers are on the PCB.

Hardware configuration

The Slice of Relay needs no hardware configuration out the box unless you wish **not** to use the default pins of 18 & 22.

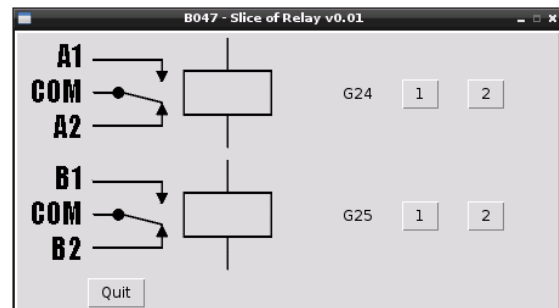
This is achieved by removing the jumpers as indicated below and connecting the left hand pin of each open jumper to a GPIO pin of your choice.



Python GUI example software

There is a very simple graphical Python application available. Pictured below. Download it from:

<https://github.com/CisecoPlc/B047-Slice-of-Relay>



Download all the files from git hub into a directory and launch from that directory using the following command

```
gksudo ./Relay.pi
```

Relay	Physical pin	RPI.GPIO	WiringPi(default)
A	18 / G24	18	5
B	22 / G25	22	6

Software installation

Please make sure you get upper and lower case characters correct in these commands.

Using an SD card image from our shop (either download or buy)

<http://shop.ciseco.co.uk/4gb-wheezy-raspberry-pi-sd-card-configured-for-ciseco-products/>

On your Pi desktop, double click LX Terminal or from the \$prompt type the following to install the various parts you will need. Follow any instructions given on screen.

```
$git clone git://git.drogon.net/wiringPi
```

```
$cd wiringPi
```

```
$/build
```

Test wiring pi by typing

```
$gpio -v
```

(it should return a few lines of info, if you get it then move on, if not try installing WiringPi again)

```
$sudo apt-get install python-dev
```

```
$sudo pip install wiringpi2
```

```
$sudo pip install psutil
```

Code samples

Once you have everything installed and working life becomes much more fun, we can now try out some python code. Open python

with admin rights by typing;

```
$sudo python
```

Type at the >>>prompt

```
import wiringpi2 as wiringpi
```

```
wiringpi.wiringPiSetup()
```

```
wiringpi.pinMode(5,1)
```

```
wiringpi.digitalWrite(5,1)
```

You should have relay A active and it's LED now lit. You can repeat for relay B by changing the above code line to

```
wiringpi.pinMode(6,1)
```

```
wiringpi.digitalWrite(6,1)
```

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