Grove - 2-Coil Latching Relay

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Wiki: http://www.seeedstudio.com/wiki/Grove_-_2-Coil_Latching_Relay

Bazaar: http://www.seeedstudio.com/depot/Grove-2Coil-Latching-Relay-p-1446.html

Document Revision History

Revision	Date	Author	Description
1.0	Sep 21, 2015	Victor.He	Create file

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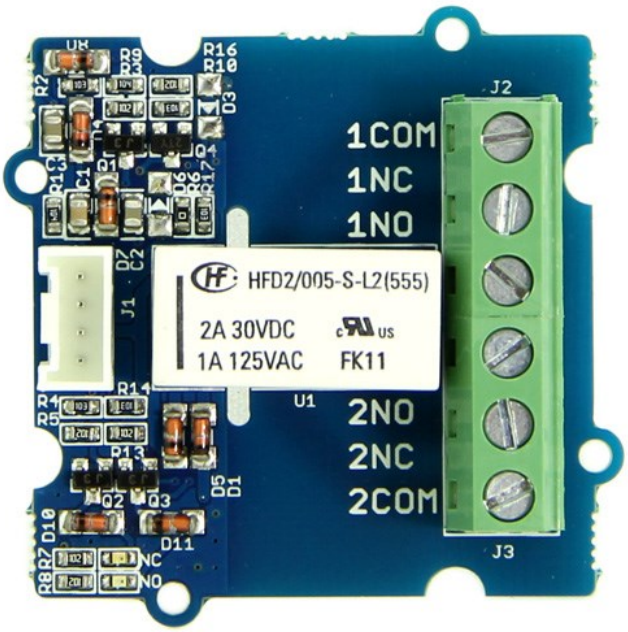
1. Introduction

This module is based on 2-Coil Latching Relay. Contrast to the ordinary relay, this latching relay does not need continuous power to keep the state, only a rising/falling pulse is needed to change the work state. Even the power can be removed when the work state do not need to change, making this module especially suitable for low-power projects.



2. Features

- Grove Connector
- Low power consumption
- Dual Switch

3. Specifications

Item	Min	Typical	Max	Unit
Working Voltage	4.7	5.0	5.3	VDC
Set/Reset Voltage(Max)	4.0		VDC	
Coil Resistance	151	167	183	Ω
Switching Voltage(Max)	35VAC/35VDC		/	
Switching Current(Max)	3		A	
Set Time(Latching)	4.5(max)		ms	
Reset Time(Latching)	3.5(max)		ms	

4. Usage

4.1 With Arduino

The latching relay only draws power during the changing of state. A rising/falling voltage pulse on the signal pin changes it's working state. This is very useful in situations where energy efficiency is important, and also in situations where you need the relay to remember its state.

Let's begin to use it.

- Connect the module to D3 port of Grove - Base Shield.
- The relay hold in "set" status(Comm and NO connected) in default, when there is a rising edge on the SIG pin. It turns the "reset" state(Comm and NC connected). The reference code as show below:

```
#define LatchingRelay 3
void setup()
{
    pinMode(LatchingRelay,OUTPUT);

    digitalWrite(LatchingRelay,LOW);
    delay(1000);
    digitalWrite(LatchingRelay,HIGH);
    delay(1000);

}
void loop()
{

}
```

- The relay hold in "reset" status(Comm and NC Connected), when there is a falling edge on the SIG pin. It turns the "set" state(Comm and NO connected). The reference code as show below:

```
#define LatchingRelay 3
void setup()
{
    pinMode(LatchingRelay,OUTPUT);

    digitalWrite(3,HIGH);
    delay(1000);
```

```
    digitalWrite(3,LOW);
    delay(1000);
}
void loop()
{

}
```

- This module consumes little power when working state doesn't change. After setting the relay state, you do not need to supply power for the Latching Relay any more, which makes it especially low power consumption.

Note:

1) Relay is on the "reset" status when being released from stock.

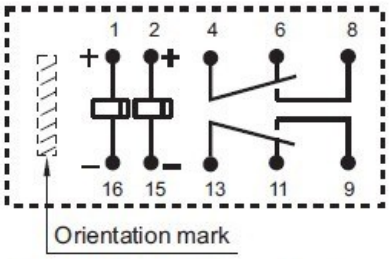


Diagram shows the "reset" position
Energize terminals 1 and 16 to "set"
Energize terminals 2 and 15 to "reset"

2) The two-way relay are controlled at the same time.

3) The NO (NC) indicator will flash once when switch to "set"("reset") status.

4.2 With Raspberry Pi

1. You should have got a raspberry pi and a grovepi or grovepi+.
2. You should have completed configuring the development environment, otherwise follow here.
3. Connection. Plug the sensor to grovepi socket D4 by using a grove cable.
4. Navigate to the demos' directory:

```
cd yourpath/GrovePi/Software/Python/
```

To see the code

```
nano grove_solid_state_relay.py      # "Ctrl+x" to exit #
```

```
import time
import grovepi

# Connect the Grove Solid State Relay to digital port D4
# CTR,NC,VCC,GND
relay = 4

grovepi.pinMode(relay,"OUTPUT")

while True:
    try:
        # switch on for 5 seconds
        grovepi.digitalWrite(relay,1)
        print "on"
        time.sleep(5)

        # switch off for 5 seconds
        grovepi.digitalWrite(relay,0)
        print "off"
        time.sleep(5)

    except KeyboardInterrupt:
        grovepi.digitalWrite(relay,0)
        break
    except IOError:
        print "Error"}
```

5. Run the demo.

```
sudo python grove_solid_state_relay.py
```

5. Resource

Grove - 2-Coil Latching Relay Eagle File

Latching_Relay_Datesheet

6. Support

Ask questions on Seeed forum.

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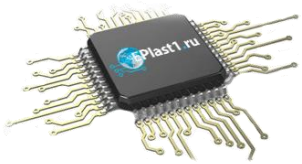

Как с нами связаться

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