

MR-BusIO-RELAY™ BusIO Relay BOARD  
User Manual

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## Description

The MR-BusIO-RELAY is an experiment board for switching AC or DC output by using mechanical relay. The maximum controlling voltage is 250VAC at 5A or 24VDC at 10A. It is using PC817 Photo-coupler IC to isolate high current and low current. It is best for switching output load.

The board can be use with MR-BusIO-MAIN board or stand-alone. PCB size is 0.63" x 2.80"

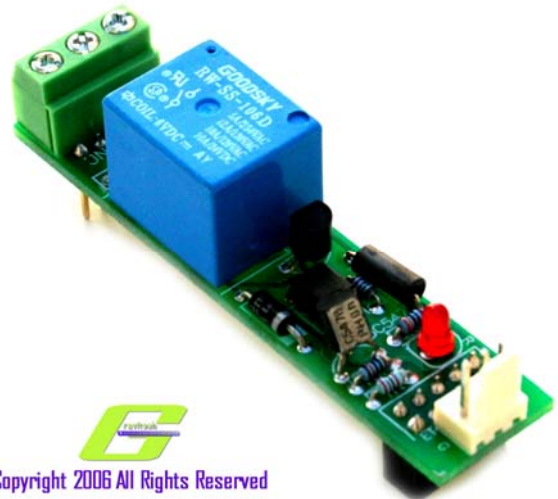
## Operation:

The PC817 require at least 5mA to drive input photo-coupler LED. It can take up to 6V in reverse bias. For an output (between collector and emitter), it can drive up to 35V with 50mA continuous current.

The operation of this board starts when applying logic HIGH to an I/O pin. The indicator LED then illuminated. The output of PC817 is driving second BC547 transistor which drive to energize the coil of the relay. The diode across the coil is to protect back EMF.

User can connect DC or AC load through output 3-PIN terminal block. It connected directly from the relay: pin1 NO (Normally Open), pin2 COM (Common), and pin3 NC (Normally Close).

User can connect output AC of DC load up to 250VAC at 5A or 24VDC at 10A.



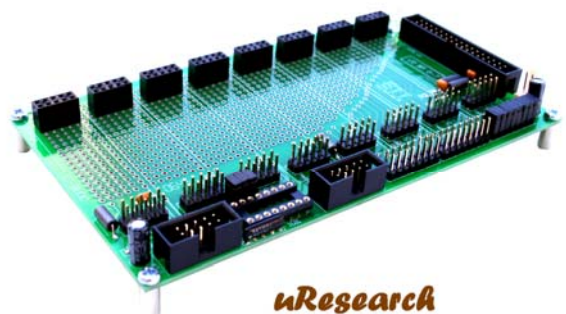
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## MR-BusIO-MAIN

The MR-BusIO-MAIN is available for purchase via our website. If you don't see the item you need, please contract our sales department at [sales@gravitech.us](mailto:sales@gravitech.us)

- **MR-BusIO-MAIN**

Experiment board which receives output signals from any microcontrollers. The signals then distribute to daughter boards for each experiment. It designed to connect directly with 10PIN MRconnect®. It is a quick and easy way to control up to 8 daughter boards.



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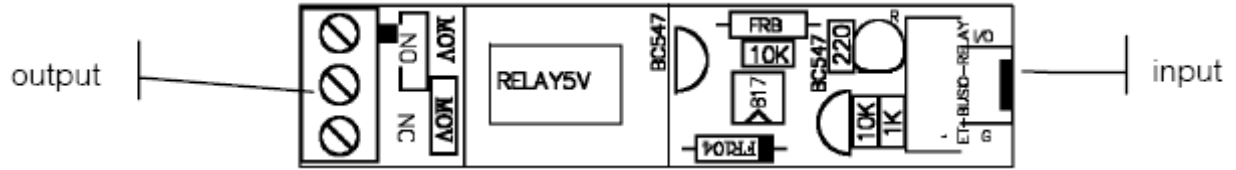


FIG 1: MR-BusIO-RELAY Board Layout

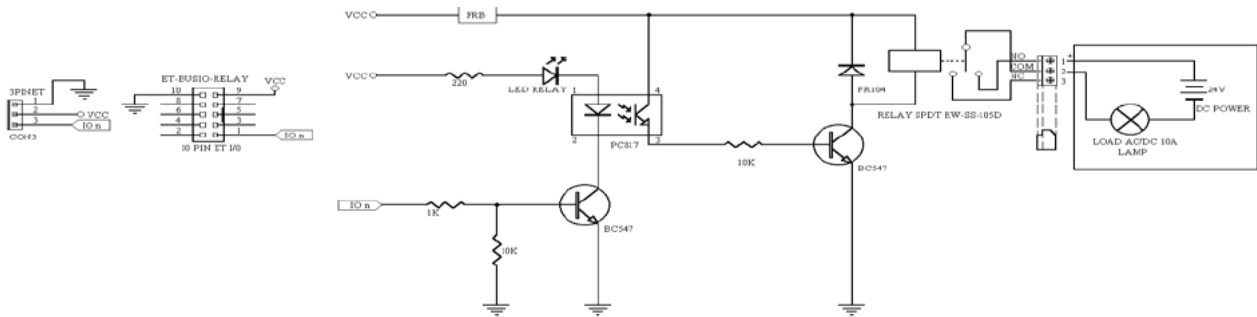


FIG 2: MR-BusIO-RELAY Schematic

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## Notes

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