

## RELMOD-2V relay module

### Key features

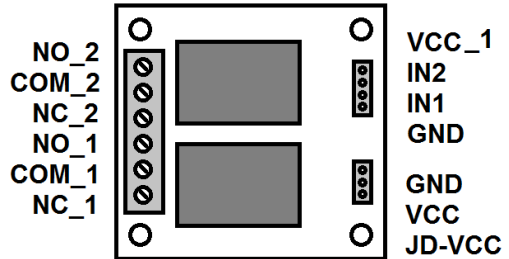
Relay module with 2 single pole, double throw (SPDT) relays with “energized” indication via LED’s. The control inputs are galvanic isolated via Optocouplers and are active low. Requires power from an external 5V power supply. Can switch up to 250V / 10A.

### Application

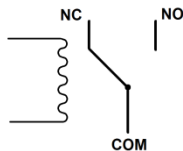
Home automation, motor controls, switching applications etc. etc.

### Description

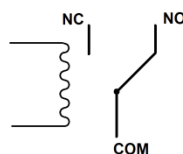
Symbol	Function
NO_2/NO_1	Normally open contact relay
NC_2/NC_1	Normally closed contact relay
COM_2/COM_1	Common contact relay
VCC_1	5V from power supply
IN2/IN1	Control input relays
GND	Ground
JD_VCC	Connected to power supply when power is not supplied via VCC_1
VCC	Connected to JD_VCC via Jumper when power is supplied via VCC_1
GND	Connected to power supply when power is not supplied via VCC_1



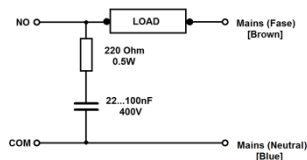
#### Relay in de-energized position



#### Relay in energized position

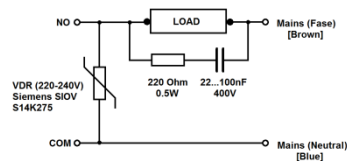


#### Suppressing resistive loads (lamps, resistors ....)



Please suppress loads via these snubber-networks when mains voltage or high current is used.

#### Suppressing inductive loads (Transformer,motor...)



### Operating conditions

Symbol	Pin no.	Min.	Typical	Max.	Unit
VCC	JD_VCC/VCC_1	4.5	5	5.5	V
IN (relays energized)	IN2/IN1	-	0	-	V
IN (relays de-energized)	IN2/IN1	VCC	VCC	VCC	-

### Characteristics

Parameter	Value	Unit
Max. switching voltage (AC)	250	VAC
Max. switching voltage (DC)	30	VDC
Max. switching current	10	A
Max. current consumption	200	mA

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## Example project

Simple Lamp sequencer (5~230V (AC) or 5~30V (DC) )

### How to connect

Connect pin JD\_VCC of the RELMOD\_2V to 5V of the external 5V power supply

Connect pin GND of the RELMOD\_2V to GND of the external power supply

Connect pin GND of the RELMOD\_2V to GND of the Arduino®

Connect pin VCC\_1 of the RELMOD\_2V to VCC of the Arduino®

Connect pin IN\_1 of the RELMOD\_2V to Digital PWM pin 2 of the Arduino®

Connect pin IN\_2 of the RELMOD\_2V to Digital PWM pin 3 of the Arduino®

Connect two (5V) low voltage lights via the + pole to the external power supply

Connect two (5V) low voltage lights via the - pole to the two NO contacts on the RELMOD\_2V (*1 light per contact*)

Connect the two COM contacts on the RELMOD\_2V with GND from the external power supply (*1 light per contact*)

### Example code

```

/* Handles "Relay is active-low" to assure
   no relay activation from reset until
   application is ready.

#define RELAY_ON 0
#define RELAY_OFF 1

#define Relay_1 2 // Arduino Digital I/O pin number
#define Relay_2 3

void setup() //***** SETUP: RUNS ONCE *****/
{
  //-----( Initialize Pins so relays are inactive at reset)----
  digitalWrite(Relay_1, RELAY_OFF);
  digitalWrite(Relay_2, RELAY_OFF);

  //---( THEN set pins as outputs )----
  pinMode(Relay_1, OUTPUT);
  pinMode(Relay_2, OUTPUT);
  delay(2000); //Check that all relays are inactive at Reset
}

//--(end setup )--

void loop() //***** LOOP: RUNS CONSTANTLY *****/
{
  //---( Turn all 2 relays ON in sequence)---
  digitalWrite(Relay_1, RELAY_ON); // set the Relay ON
  delay(1000); // wait for a second
  digitalWrite(Relay_2, RELAY_ON); // set the Relay ON
  delay(1000); // wait for a second

  //---( Turn all 2 relays OFF in sequence)---
  digitalWrite(Relay_1, RELAY_OFF); // set the Relay OFF
  delay(1000); // wait for a second
  digitalWrite(Relay_2, RELAY_OFF); // set the Relay OFF
  delay(1000); // wait for a second
}

//--(end main loop )--

```

### Sources

[http://arduino-direct.com/sunshop/index.php?l=product\\_detail&p=156](http://arduino-direct.com/sunshop/index.php?l=product_detail&p=156)  
<http://arduino-info.wikispaces.com/ArduinoPower>