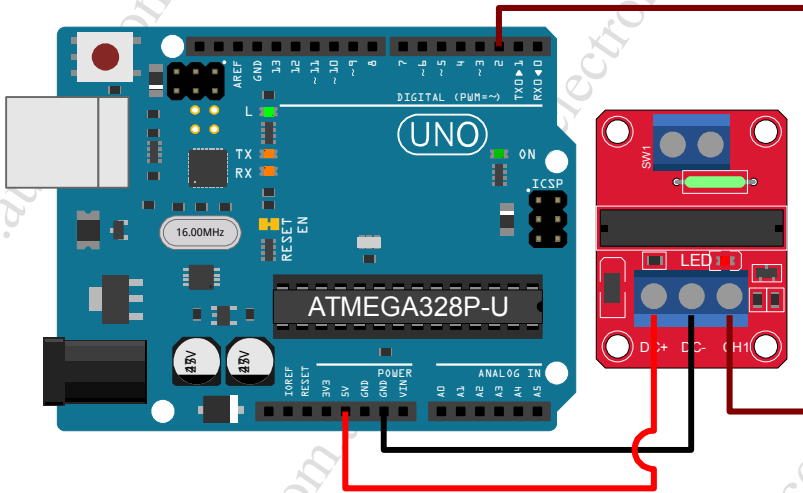# Solid State Relay Module

This module contains a "OMRON G3MB-202P" (or equivalent) solid state relay capable of switching loads of up to 2 amps [A] at up to 250 Volts Alternating Current. It includes an on-board Light Emitting Diode which illuminates when the relay is energised. The relay is controlled using a 5 Volts Direct Current signal from a digital pin with a digital "LOW" turning the relay on, and a digital "HIGH" turning the relay off.

Table 1: Solid State Relay Module Pin Connections

Device	Arduino	Wire	Description
DC+	5V	🟥	5 VDC positive supply for board circuitry.
DC−	GND	⬛	Ground connection.
CH1	D2	🟥	Signal for relay activation.

D2: can be any digital pin.

The sketch below can be used to control the Solid State Relay Module via the Arduino Serial Monitor.

```
int pRelay = 2;
void setup() {
  Serial.begin( 9600 );
  while ( !Serial ) {
    ;
  }
  pinMode ( pRelay, OUTPUT );
  digitalWrite ( pRelay, HIGH );
  Serial.println( "0 to turn off, 1 to turn on" );
}
void loop () {
  if (Serial.available() > 0) {
    int cInput = Serial.read();
    if ( cInput == '0' ) {
      Serial.println( "Off" );
      digitalWrite ( pRelay, HIGH );
    }
    if ( cInput == '1' ) {
      Serial.println( "On" );
      digitalWrite ( pRelay, LOW );
```

Solid State Relay Module…

```
            }
        }
    }
}
```

Module Specifications

PCB Dimensions (H × W × D):   25.2 × 34.1 × 1.6 millimetres [mm]
Enclosing Dimensions (H × W × D):   25.2 × 34.1 × 23.2 mm
Weight: 53.85 grams [g]
Input Voltage: 5 **VDC**

Relay Manufacturers Specifications

Relay Model: OMRON G3MB-202P
Input Voltage: 5 **VDC**
Contact Rating: 2 amps [A] @ 240 **VAC** 50~60 Hertz [Hz]

Module Performance

Current Draw (Relay energised):   9.7 mA @ 5.05 **VDC** (relay + on-board circuitry)
Current Draw (Relay not energised):   0 mA
Open Resistance: 26.54 megaohm [MΩ]
Closed Resistance: 9.91 kiloohm [kΩ]

Module Mounting

The module has 4 × 3.1 mm diameter holes at each corner of the **P**rinted **C**ircuit **B**oard. As the bare component leads protrude through the bottom of the **PCB**, suitable spacers and insulation must be used.

Projects

Folder: **Modules\Electromagnetic\Solid_State_Relay**
• **Solid_State_Relay_SM**: Controls the relay by entering "0", or "1" in the Arduino Serial Monitor.
• **Solid_State_Relay_Timed**: Toggles the state of the relay based on "time on" and "time off" intervals.

Solid State Relay Module - Dimensions