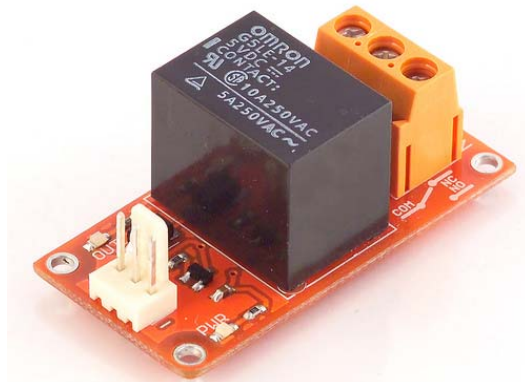# Arduino TinkerKit Relay Module

Overview

A **relay** is an **electrically operated switch** that allows you to turn on or off a circuit using voltage and/or current much higher than the Arduino could handle. There is no connection between the low voltage circuit operated by Arduino and the high power circuit. The relay protects each circuit from each other.

Warning: We don't recommend you operate circuits powered at more than 24V without the supervision of an expert.

Input: The relay is a simple mechanical on/off switch. It activates when the input reaches 5v and turns off when the input is 0v. You can control it though the digitalWrite() function on Arduino.

The module provides three connections labeled **COM**, **NC** and **NO**. **NC** stands for "**NORMALLY CLOSED**". This means that when the relay has no signal (LOW or 0V from an Arduino), the connected circuit wil be active; conversely, if you apply 5V or pull the pin HIGH, it will turn the connected circuit off. **NO** stands for "**NORMALLY OPEN**", and functions in the opposite way; when you apply 5V the circuit turns on, and at 0V the circuit turns off. Relays can replace a manual switch. Remove the switch and connect its wires to **COM** and **NO**. When the relay is activated the circuit is closed and current can flow to the device you are controlling.

Module Description: this module features an 250v 10A mounted on a 2 module TinkerKit board, one standard TinkerKit 3pin connector, one transistor, a green LED that signals that the module is correctly powered and an yellow LED that indicates when the relay is active.

This module is an **ACTUATOR**. The connector is an **INPUT** which must be connected to one of the **OUTPUT** connectors on the **TinkerKit Shield**.
you avoid unexpected errors.

Code Example

```
/*
  based on Blink, Arduino's "Hello World!"
  Turns on a Relay on for one second, then off for one second, repeatedly.
  The Tinkerkit Relay Module is hooked up on O1


  This example code is in the public domain.
 */

#define O0 11
#define O1 10
#define O2 9
#define O3 6
#define O4 5
#define O5 3
#define I0 A0
#define I1 A1
#define I2 A2
#define I3 A3
#define I4 A4
#define I5 A5


void setup() {
  // initialize the digital pin as an output.
  pinMode(O1, OUTPUT);
}

void loop() {
  digitalWrite(O1, HIGH);   // turn the relay on
  delay(1000);              // wait for a second
  digitalWrite(O1, LOW);    // turn the relayoff
  delay(1000);              // wait for a second
}
```

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