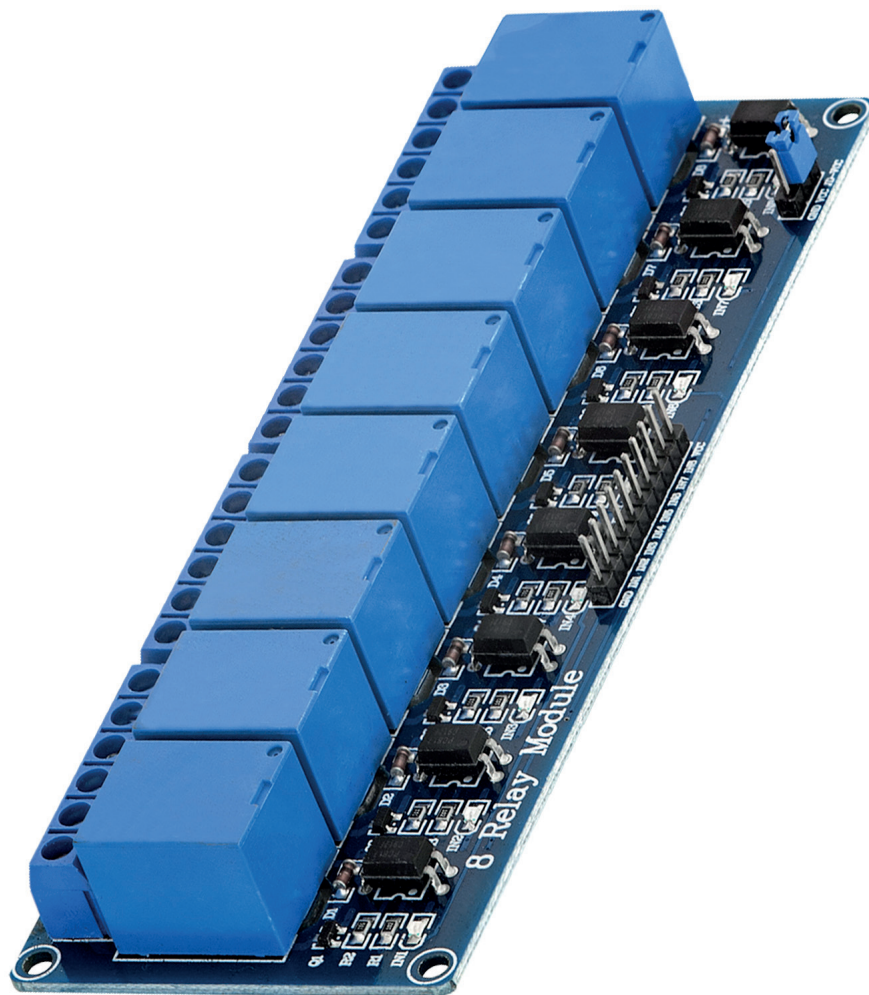


8-Relais Modul Datenblatt



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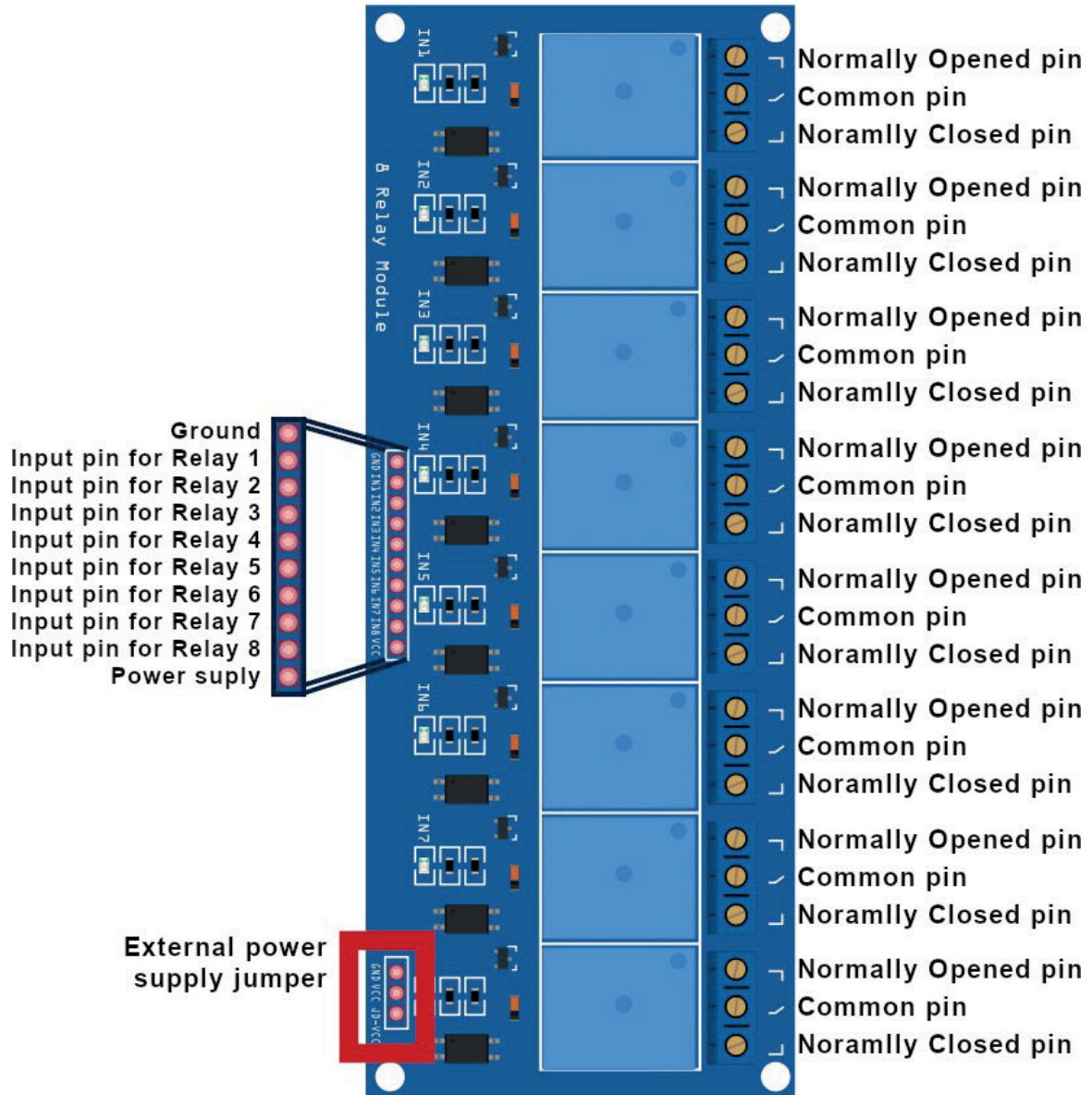
1. Brief Data

- Relay Maximum output: DC 30V/5A, AC 50V/5A.
- 8 Channel Relay Module with Opto-coupler. LOW Level Trigger expansion board.
- Standard interface that can be controlled directly by microcontroller (8051, AVR, *PIC, DSP, ARM, ARM, MSP430, TTL logic).
- Relay of high quality low noise relays SPDT. A common terminal, a normally open, one normally closed terminal.
- Opto-Coupler isolation, for high voltage safety and prevent ground loop with microcontroller.

Specs:

- TTL Control Signal: 3.3V to 12V DC
- Maximum AC: 5A 50V
- Maximum DC: 5A 30V
- Contact Type: Both: Normally Closed – NC, Normally Opened - NO
- Dimensions: 50 x 140mm [1.97 x 5.5in]

2. Module Pinout



3. Operating Principle

See the picture below: A is an electromagnet, B armature, C spring, D moving contact, and E fixed contacts. There are two fixed contacts, a normally closed one and a normally open one.

When the coil is not energized, the normally open contact is the one that is off, while the normally closed one is the other that is on.

Supply voltage to the coil and some currents will pass through the coil thus generating the electromagnetic effect. So the armature overcomes the tension of the spring and is attracted to the core, thus closing the moving contact of the armature and the normally open (NO) contact or you may say releasing the former and the normally closed (NC) contact. After the coil is de-energized, the electromagnetic force disappears and the armature moves back to the original position, releasing the moving contact and normally closed contact. The closing and releasing of the contacts results in power on and off of the circuit.

4. Input

VCC : Connected to positive supply voltage (supply power according to relay voltage)

GND : Connected to supply ground.

IN1: Signal triggering terminal 1 of relay module

IN2: Signal triggering terminal 2 of relay module

IN3: Signal triggering terminal 3 of relay module

IN4: Signal triggering terminal 4 of relay module

IN5: Signal triggering terminal 5 of relay module

IN6: Signal triggering terminal 6 of relay module

IN7: Signal triggering terminal 7 of relay module

IN8: Signal triggering terminal 8 of relay module

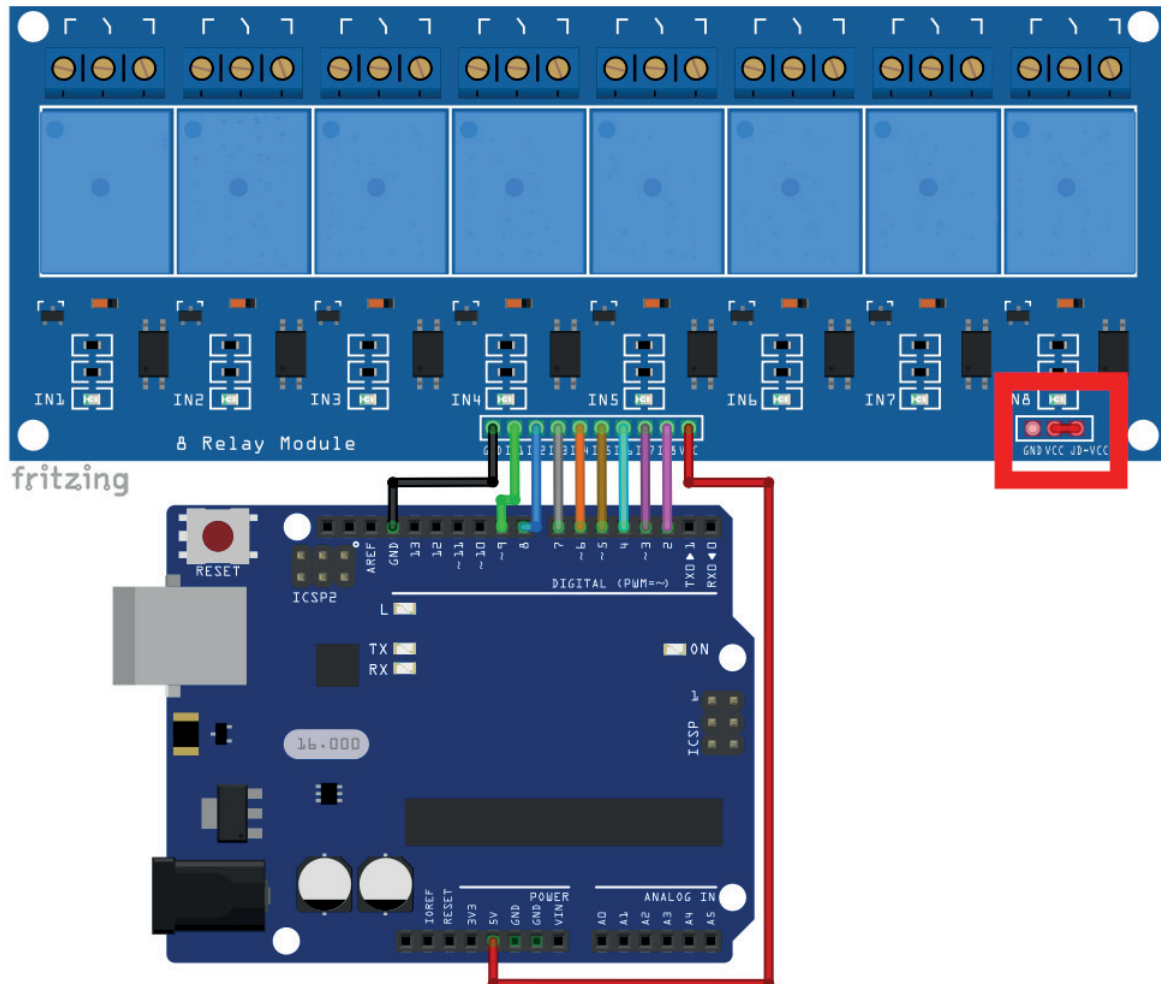
5. Output

Each module of the relay has one NC (normally close), one NO (normally open) and one COM (Common) terminal. So there are 8 NC, 8 NO and 8 COM of the channel relay in total. NC stands for the normal close port contact and the state without power. NO stands for the normal open port contact and the state with power. COM means the common port. You can choose NC port or NO port according to whether power or not.

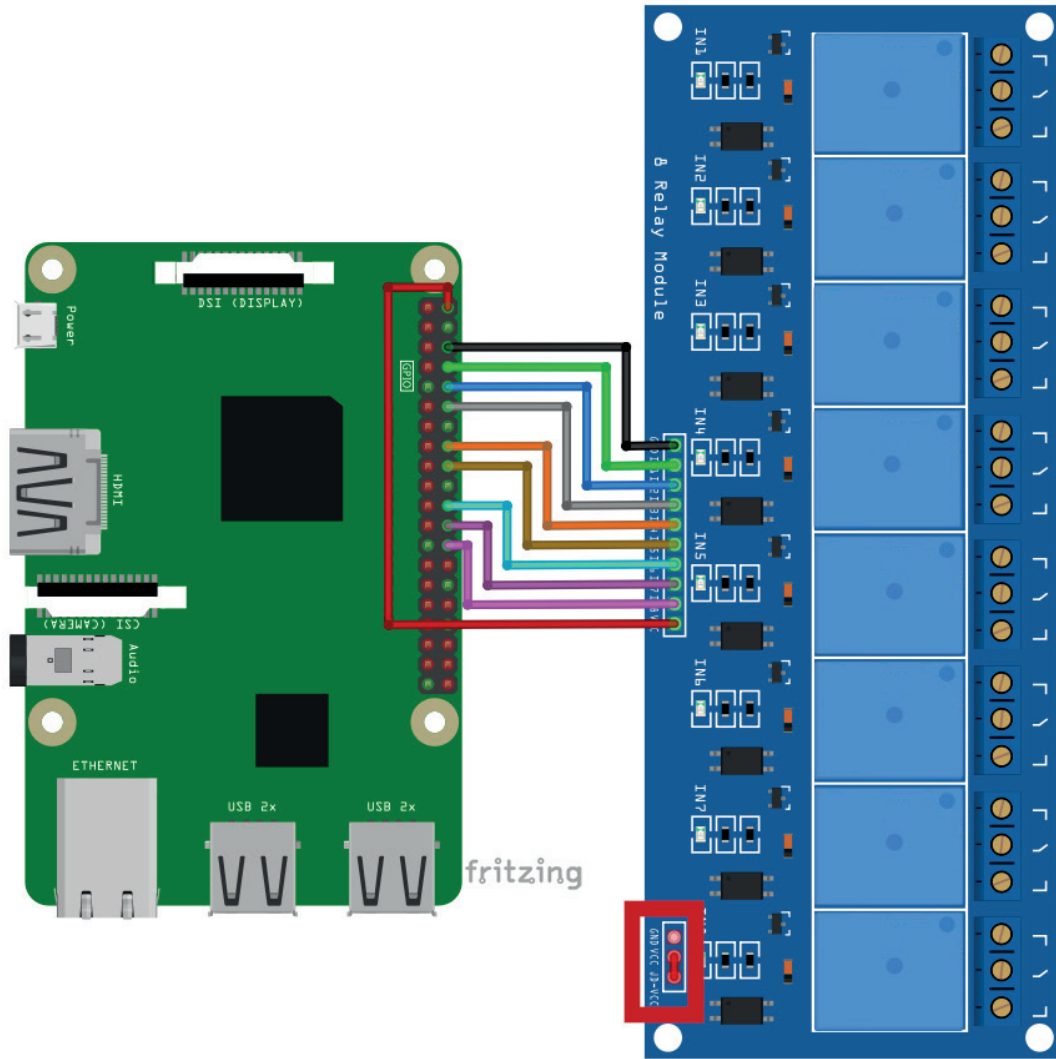
6. Testing Setup

When a low level is supplied to signal terminal of the 8-channel relay, the LED at the output terminal will light up. Otherwise, it will turn off. If a periodic high and low level is supplied to the signal terminal, you can see the LED will cycle between on and off.

7. Connection Diagram



Module Pin	Microcontroller Pin
IN1	D9 - Green Wire
IN2	D8 - Blue Wire
IN3	D7 - Gray Wire
IN4	D6 - Orange Wire
IN5	D5 - Ochre Wire
IN6	D4 - Cyan Wire
IN7	D3 - Purple Wire
IN8	D2 - Pink Wire
GND	GND - Black Wire
VCC	5V - Red Wire



Module Pin	Microcontroller Pin
VCC	5V! - Red Wire (Pin 2)
GND	GND - Black Wire
IN1	GPIO14 - Green Wire (Pin 8)
IN2	GPIO15 - Blue Wire (Pin 10)
IN3	GPIO18 - Gray Wire (Pin 12)
IN4	GPIO23 - Orange Wire (Pin 16)
IN5	GPIO24 - Ochre Wire (Pin 18)
IN6	GPIO25 - Cyan Wire (Pin 22)
IN7	GPIO8 - Purple Wire (Pin 24)
IN8	GPIO7 - Pink Wire (Pin 26)

NOTE 1: Connect VCC pin of the module to the 5V pin of the Microcontroller Board compatible with Raspberry Pi, because the module can not work when there is less than 5V on the VCC pin.

NOTE 2: As you can see in the red rectangle on the connection diagram, external power supply jumper is connected, connecting JD-VCC pin with VCC pin. This means that the 8 relays module will be powered up from Microcontroller Board Compatible with Raspberry Pi via VCC pin.



SAFETY WARNING!

When doing projects that are connected to mains voltage, misuse may lead to serious electrical shock!

For the sake of your own safety, be 100% sure what you are doing! Otherwise, ask someone who knows!

According to Current regulations, working with mains voltage is reserved for qualified electricians only!

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