

GENERAL RELAY INFORMATION

Warning! Risk of Electric Shock!

This information concerns kits and modules with relay outputs. TO USE A RELAY OUTPUT SAFELY YOU MUST OBSERVE THE MAXIMUM VOLTAGE AND CURRENT LIMITS QUOTED IN THE **PRODUCT DOCUMENTATION** (this is because the board design may not be rated to switch the maximum voltage and current limits printed on the relay itself or specified in the relay manufacturer's data sheet).



Controlling mains equipment with relay outputs must be treated with extreme caution. Electric shocks can cause severe and permanent injury or even death. Construction, installation, testing and commissioning should only be attempted by suitably qualified persons, or under the supervision of a suitably qualified person. These products are not suitable for children. Before connecting mains powered equipment to the relay outputs, please check with the relevant authorities in order to ensure compliance with all local safety regulations. Many areas of the assembly may operate at mains voltage. A suitable isolating enclosure must be used. Exposed screw terminal blocks on some products must be insulated to prevent contact with exposed parts at mains potential. Connected equipment should be suitably safety fused.

You will find relay outputs on many of the kits and modules that we sell. A relay is an electrically operated on/off switch. The voltage and current limits specified in the product documentation generally relate to resistive or light inductive loads.

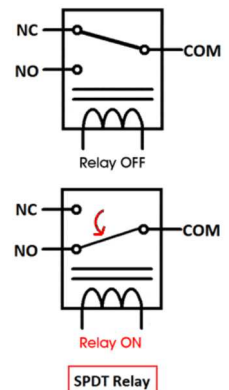
Relay Terminals

Most boards have SPDT (Single Pole Double Throw) style relays that have 3 connections:

C = Common contact (common to NC and NO contacts)

NC = Normally-Closed contact is only connected to Common contact when relay is OFF (see diagram opposite). When the relay is activated the C contact is pulled over to the NO contact and C/NC go open circuit. It is called a Form B or "break" contact.

NO = Normally-Open contact is only connected to Common contact when relay is ON. C/NO are open circuit when the relay is OFF (called a Form A or "make" contact).

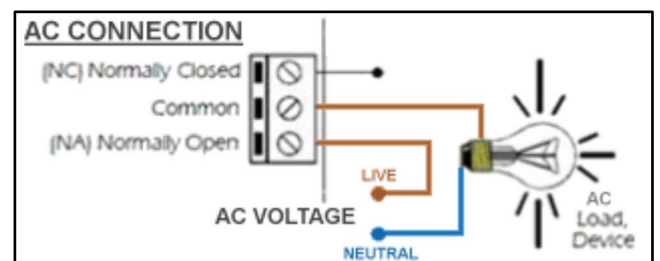
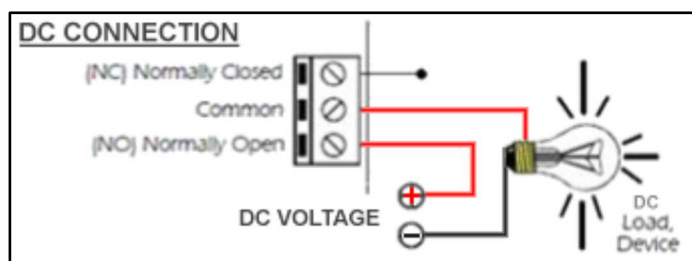


Connecting The Device To Be Controlled

You must provide a power supply to the device you want to control. No voltage is present at the relay terminals (remember it is just a switch). The relay is normally connected in *series* with the positive (+) /live power wire of the device you want to control.

In this case, the positive/live wire FROM the power source should be connected to Common. Then either the NO or NC terminal (as appropriate for your purpose) is connected to the positive (+)/live wire going TO the device you want to control. The negative (-)/neutral wire does not connect to the relay at all. It goes directly from the power source negative/neutral output to the device negative (-)/neutral terminal.

Typical SPDT Relay Connection Diagrams



Anti-Spark SPDT Relay Connection Diagram

Sometimes the connected equipment can cause arcing across the relay contacts. This must be corrected by installing a resistor and capacitor (not supplied)

between the two contacts of the relay as shown below. Component values are for 230Vac mains. Alternatively, you can fit varistor (Order Code a [VDR300](#)).

