

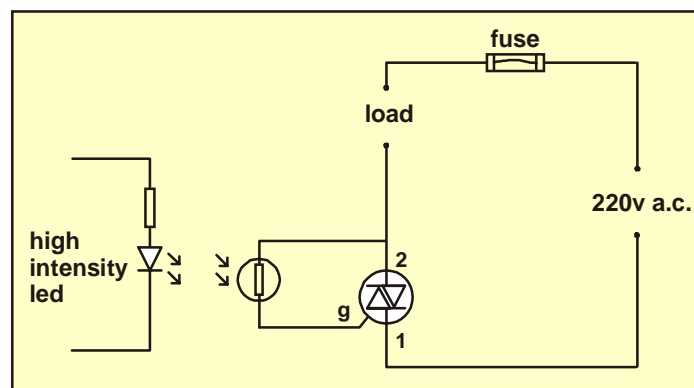
Optically Isolated Triac Driver

A triac can be used to make something similar to a relay.

IMPORTANT

If a triac is to be used to switch currents at 220v, special care must be taken to insulate the high voltage circuit from the low voltage circuit. If this is not done and the triac develops a fault, it might feed the 220v into the low voltage part of the circuit. This would, of course, be disastrous for the low voltage part of the circuit **but it could also be very dangerous for the user.**

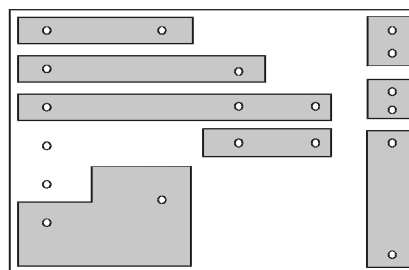
One simple way of isolating the two parts of the circuit is shown below. If a high intensity red led is used in the circuit below, the triac can be switched using a current as low as $\frac{1}{2}$ mA. This means that the circuit can be connected directly to the output of an op. amp. or even a CMOS logic chip.

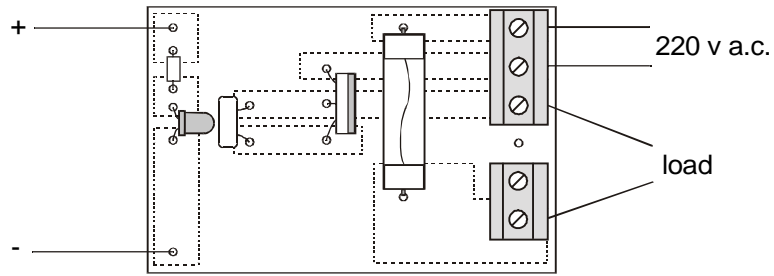


The resistor in series with the led should be 3k9 for use with a 5v circuit and 6k8 for 9v.

This circuit has been tested and found to work well using a “large” (10mm diameter) l.d.r. and the following triacs: BT137F (600v), BTB 12 700.

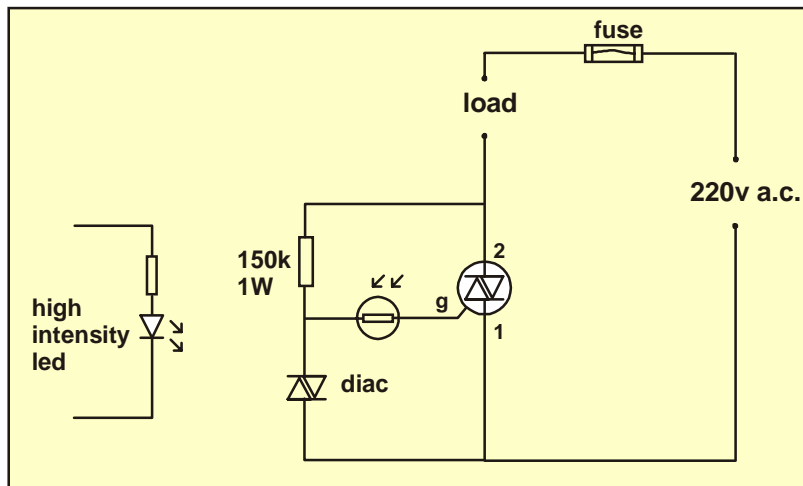
It can probably be made to work with most high power triacs but is NOT suitable for use with triacs having a very sensitive gate (for example TIC225, TIC226, ...). For these triacs, use the alternative circuit.





Alternative circuit (for use with triacs like TIC225)

The printed circuit board might need to be modified slightly to accommodate this circuit.



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