

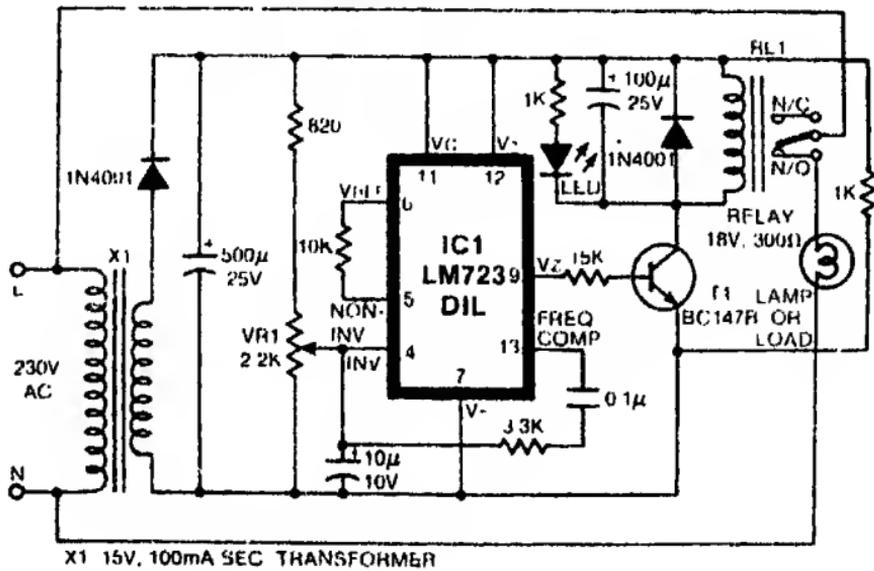
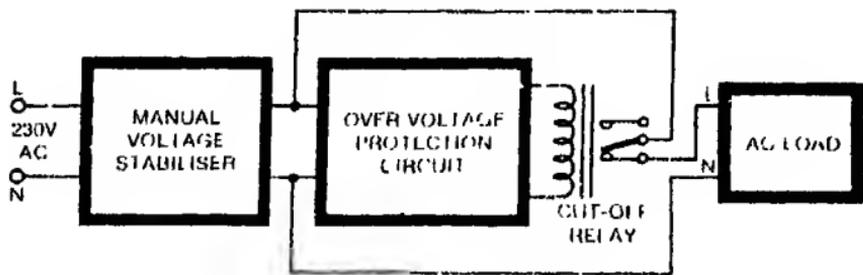
Overvoltage Cutout Using IC 723

Yes, the circuit uses the popular voltage regulator chip IC 723, as an overvoltage cutout. The 723 contains all the essential components a stable reference voltage (7.15 volts), a comparator etc. required for an accurate cutout circuit. Thus, with a handful of other components, you can protect your expensive items such as VCRs, stereo systems, televisions, etc from damage due to overvoltage.

The circuit can be used after a stepup/down manual voltage stabiliser (see block diagram). It can also be used without the stabiliser - for this the transformer is connected directly to the mains. Of course, in this method, you will have to wait for the mains supply to reduce before the item can operate again.

The reference voltage is connected to the non-inverting terminal of the comparator. Through a potential divider arrangement, voltage is fed to the inverting terminal. Normally the voltage at the inverting terminal is set such that it is less than that at the non-inverting terminal. The output at V_z (pin 9) is high, saturating the transistor T1. The relay operates and power is connected to the protected mains equipment.

When the mains voltage rises above the pre-set (safe) limit,



non-inverting terminal and the output of the comparator swings to ground. The transistor T1 cuts off, and the relay becomes inoperative disconnecting supply to the unit. When the mains voltage is reduced, using the manual stabiliser, the reverse procedure occurs, and power is restored.

The maximum 'safe' voltage is set using the manual stabiliser. The preset VRI is adjusted so that the relay just cuts off when the safe limit (say, 225 volts) is exceeded. Repeat till accurate setting is achieved.

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