AC Mains Timed Output Controller

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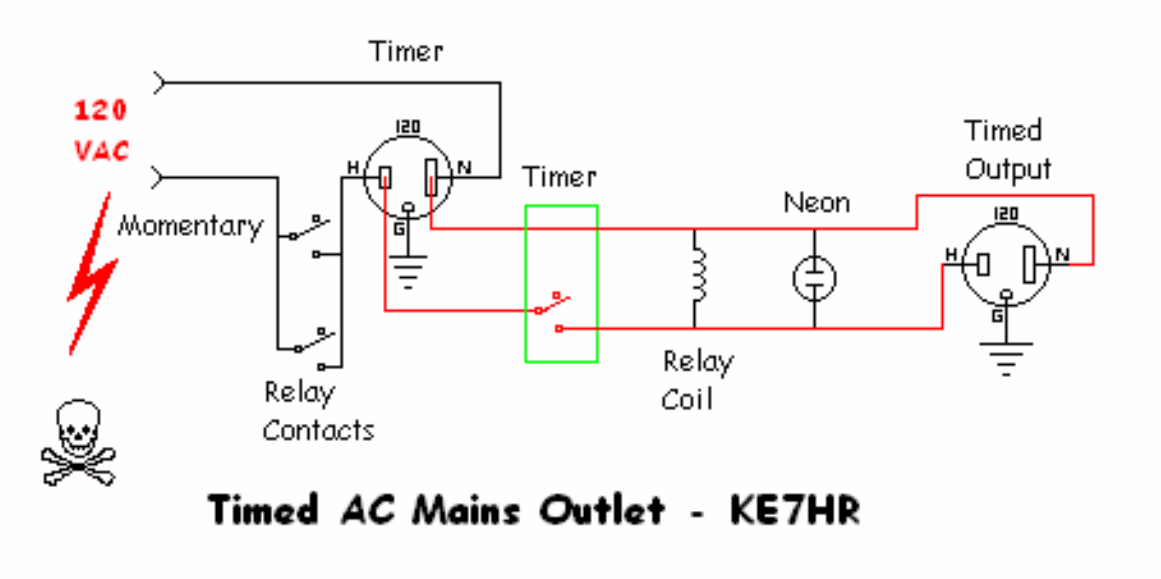
There are many times, especially with battery chargers, that a certain amount of time needs to be delivered to a device from the AC mains. It is possible to just use a mechanical interval timer of the kind that people use to turn lamps on and off to make their house look 'lived in'. This sort of scheme will keep turning the device (battery charger) on every day. The user needs to remember to take the battery off of the charger after it is through charging and before the next cycle starts to prevent over charging.

I remembered a circuit from many years ago (and do not know to whom to attribute this to) that would use a small relay and use the mechanical lamp timer to latch the relay until the timer output went off, there by turning off the input to the timer. Here is my version.



CAUTION! This circuit uses dangerous voltages!

The 120 volt AC mains power comes in to the timer socket and a momentary switch. Closing the switch energies the timer socket and therefore the lamp timer. When the timer is activated the power can flow to the relay coil, closing the contacts of the relay which also energize the timer socket. While the timer is energizing the relay coil it is also allowing power to flow to the Timed Output socket and lights up a neon light to show that the timer is active. Releasing the momentary switch does not shut the Timed Output socket off since the relay is keeping the Timer Outlet energized. When the lamp timer opens it's switch turning off the Timed Output socket, the relay coil also de-energizes which opens the power line to the Timer socket.

Set the lamp timer for the number of hours that the output (battery charger) should be on and then press the momentary switch to start the timing. I generally set the lamp timer to midnight so it is easier to count the number of hours to be used!