

CONTACTLESS AC MAINS VOLTAGE DETECTOR

This is a CMOS IC (CD4033) based circuit which can be used to detect presence of AC mains voltage without any electrical contact with the conductor carrying AC current/voltage. Thus it can be used to detect mains AC voltage without removing the insulation from the conductor. Just take it in the vicinity of the conductor and it would detect presence of AC voltage.

If AC voltage is not present, the display would randomly show any digit (0 through 9) permanently. If mains supply is available in the conductor, the electric field would be induced into the sensing probe. Since IC used is CMOS type, its input

impedance is extremely high and thus the induced voltage is sufficient to clock the counter IC. Thus display count advances rapidly from 0 to 9 and then repeats itself. This is the indication for presence of mains supply. Display stops advancing when the unit is taken away from the mains carrying conductor.

For compactness, a 9-volt PP3 battery may be used for supply to the gadget.

