

3 Tone lock

If you've been looking for an unusual electronic locking device, this should do the trick. The lock, or other load circuit, can only be actuated by applying a relatively high-frequency ac voltage to the terminals. And it's pretty unlikely that unauthorized people will have such a generator in their pocket.

The lock consists of two circuits: the hand-carried tone generator and an SCR unlocking circuit. The ac generator is built around a 4011 CMOS IC, and uses just two other parts. The entire circuit and a nine-volt battery to power it can be built inside a small container.

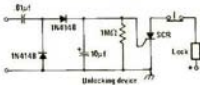
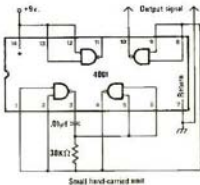
The unlocking circuit uses an SCR to complete the locking circuit, which can be nothing more than a solenoid-actuated bolting device. The SCR itself draws no current until fired by the ac generator.

You can customize your lock by

creating a unique two-pin connector through which the ac voltage is applied to the firing potential of the SCR circuit. Although not shown in the diagram, you can apply power to the ac generator through a push-to-make momentary contact switch.

In operation, the ac voltage generated in the hand-carried unit is rectified by the 1N4148 diodes. The resulting dc is applied to the 10 mfd capacitor, which requires about 100 cycles of ac to charge to the firing potential of the SCR gate. A push-to-break momentary contact switch opens the SCR circuit to relock the device.

If someone tries to use the lock with simple dc, the .01 mfd blocking capacitor protects your security. And applying 60 Hz won't help much either. So unless a would-be intruder has a three kilohertz ac generator in his pocket with your



unique connector on its end, your security will depend on the physical strength of the actual locking device you use.