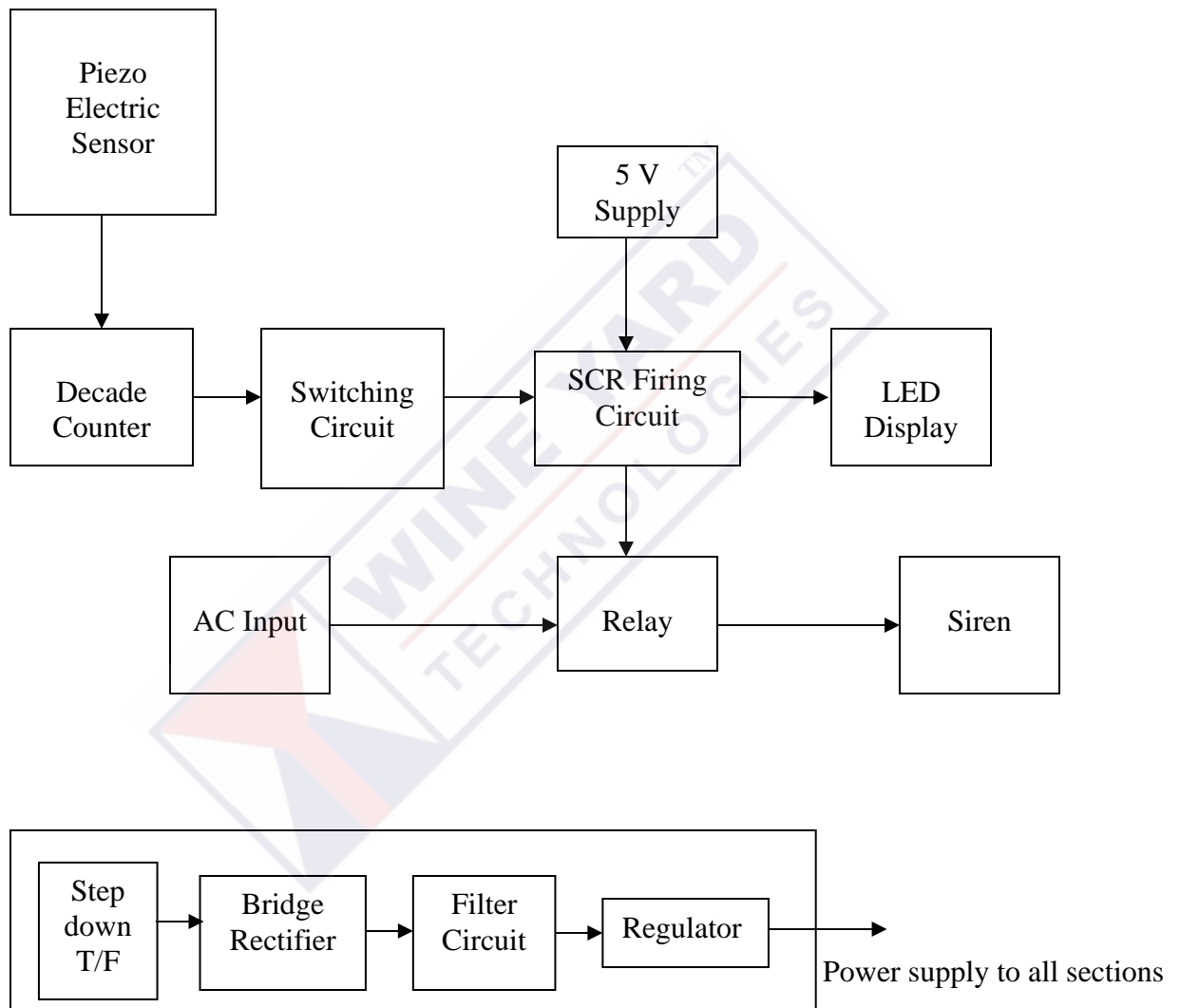


Implementation of Wall Breaking Sensor with Loud 60dB Siren

Security is primary concern everywhere and for every one. Every person wants his home, industry etc to be secured. This project describes a security alarm system that can monitor an industry and home. This is a simple and useful security system and easy to install. This vibration detector is realized using readily available, low cost components. One of its many applications is in a rolling shutter guard for offices and shops. The detector will sense vibration caused by activities like drilling and switch on the connected load (bulb, piezo buzzer, etc) to alert you.

The circuit works off a 5V battery or 5V regulated power supply and uses a piezo ceramic element as the vibration detector. The same is easily available from electronics/telephone component vendors or you can take it out from an active buzzer. Initially, when the power is switched on, decade counter is reset by power-on-reset components. As a result, output of Decade counter goes high and the entire circuit is in idle state. LED indicates the power status. In the event of vibrations, decade counter is clocked by the pulses from the piezo ceramic element connected to its clock pin. All the outputs of decade counter are fed to relay- driver switching transistor through diodes connected in OR mode. Immediately after clocking, any of the outputs of decade counter would go high and NPN transistor would conduct. As a result, SCR is fired through its gate. This, in turn, energizes relay. The relay contacts can be used to switch any alarm device to indicate vibration detection. The circuit can be reset by momentarily pressing switch. Two Zener diodes at the clock input of IC1 are used for protection against high voltage input. In the case of repeated false triggering of decade counter, add a 100nF capacitor in parallel to the piezoceramic element.

Implementation of wall breaking sensor for bank security



Advantages:

Highly sensitive

Fit and Forget system

Low cost and reliable circuit

Loud siren sound up to 60dB

System can be armed / disarmed by owner only using key operated lock switch

Applications:

Museums

Home / Office security

Jeweler shops

Banks

