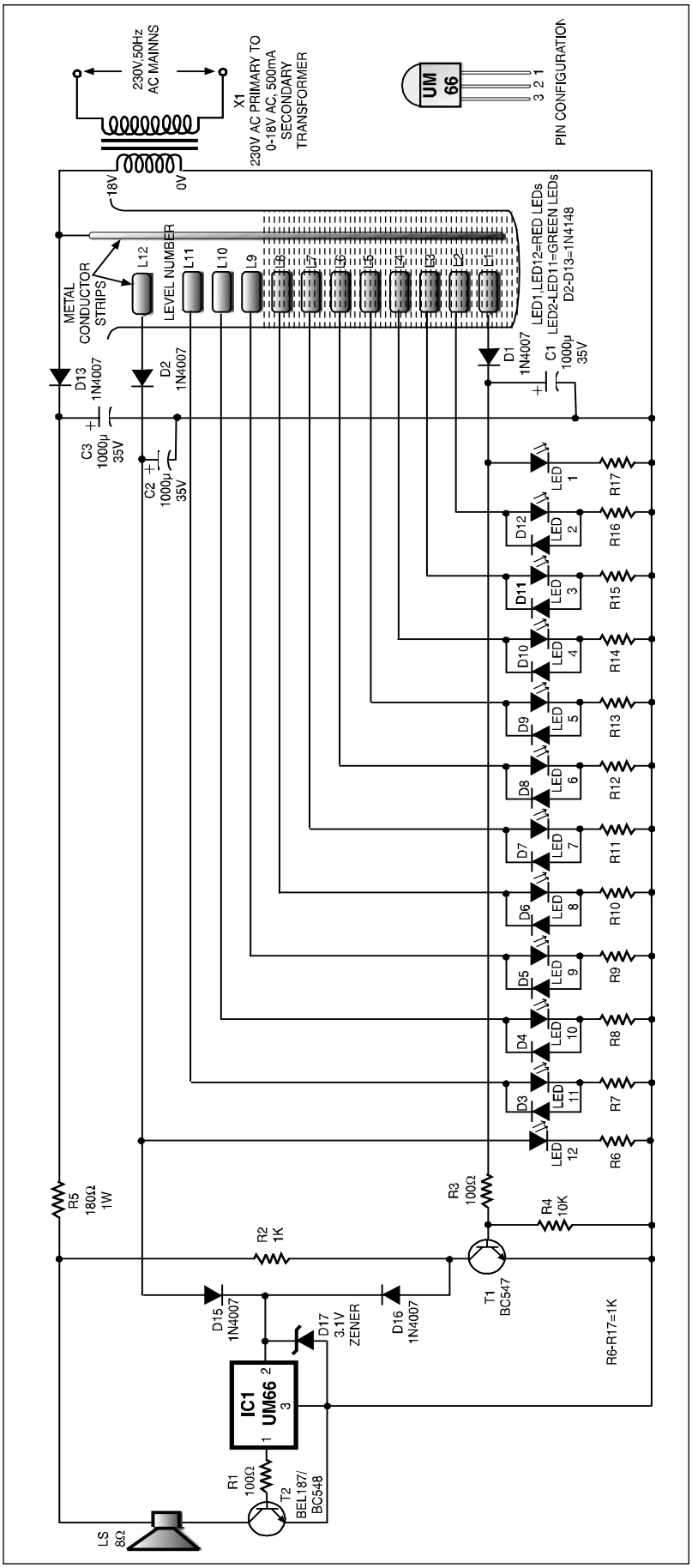

WATER LEVEL INDICATOR WITH ALARM

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Here is a simple, versatile circuit which indicates the level of water in a tank. This circuit produces alarm when water level is below the lowest level L1 and also when water just touches the highest level L12. The circuit is designed to display 12 different levels. However, these display levels can be increased or decreased depending upon the level resolution required. This can be done by increasing or decreasing the number of level detector metal strips (L1 through L12) and their associated components.

In the circuit, diodes D1, D2 and D13 form half-wave rectifiers. The rectified output is filtered using capacitors C1 through C3 respectively.

Initially, when water level is below strip L1, the mains supply frequency oscillations are not transferred to diode D1. Thus its output is low and LED1 does not glow. Also, since base voltage of transister T1 is low, it is in cut-off state and its collector voltage is high, which enables melody generating IC1 (UM66) and alarm is sounded.

When water just touches level detector strip L1, the supply frequency oscillations are transferred to diode D1. It rectifies the supply voltage and a positive DC voltage develops across capacitor C1, which lights up LED1. At the same time base voltage for transistor T1 becomes high, which makes it forward biased and its collector voltage falls to near-ground potential. This disables IC1 (UM66) and alarm is inhibited.

Depending upon quantity of water present in the tank, corresponding level indicating LEDs glow. It thus displays intermediate water levels in the tank in bar-graph style.

When water in the tank just touches the highest level detector strip L12, the DC voltage is developed across capacitor C2. This enables melody generating IC1 (UM66) and alarm is again sounded.