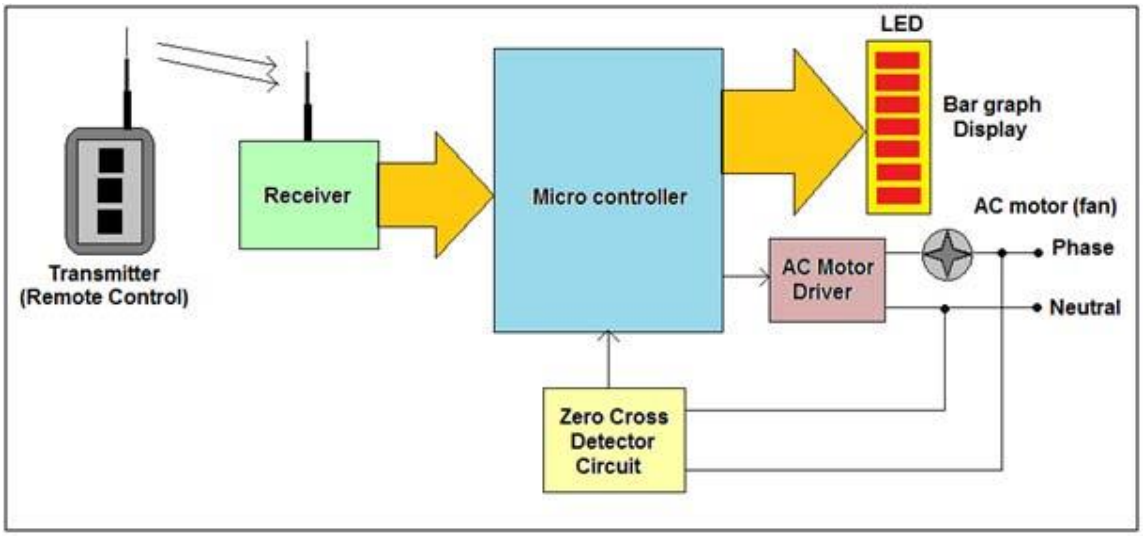
AC Motor Speed Control using RF Remote



Remote control (Transmitter: It is used to ON / OFF motor or to vary the speed of motor from remote place. Because its RF type (ASK) remote control, its range is around 150 meter. It sends particular codes for different keys over 434 MHz carrier frequency.

Receiver: It detects 434 MHz carrier and receives these key codes by demodulating it. Then it decodes the code and gives corresponding digital output to micro controller

Zero cross detector circuit: It generates short duration positive and negative pulses after every 10 ms (100 Hz) whenever applied 50 Hz AC signal crosses zero line. These pulses are given to micro controller

Micro controller: It controls speed of motor and also turns it ON or OFF. It also indicates motor speed on LED bar graph display. To vary the speed, it varies the firing angle of thyristor. To vary firing angle, it takes reference pulses from ZCD circuit.

AC Motor Driver: It gets firing pulses from micro controller and varies supplied current to motor by varying phase angle of thyristor.

LED Bar Graph: It indicates current motor speed on 8 LEDs. Maximum speed means all 8 LEDs are ON and minimum speed means single LED (lowest one) is ON.