

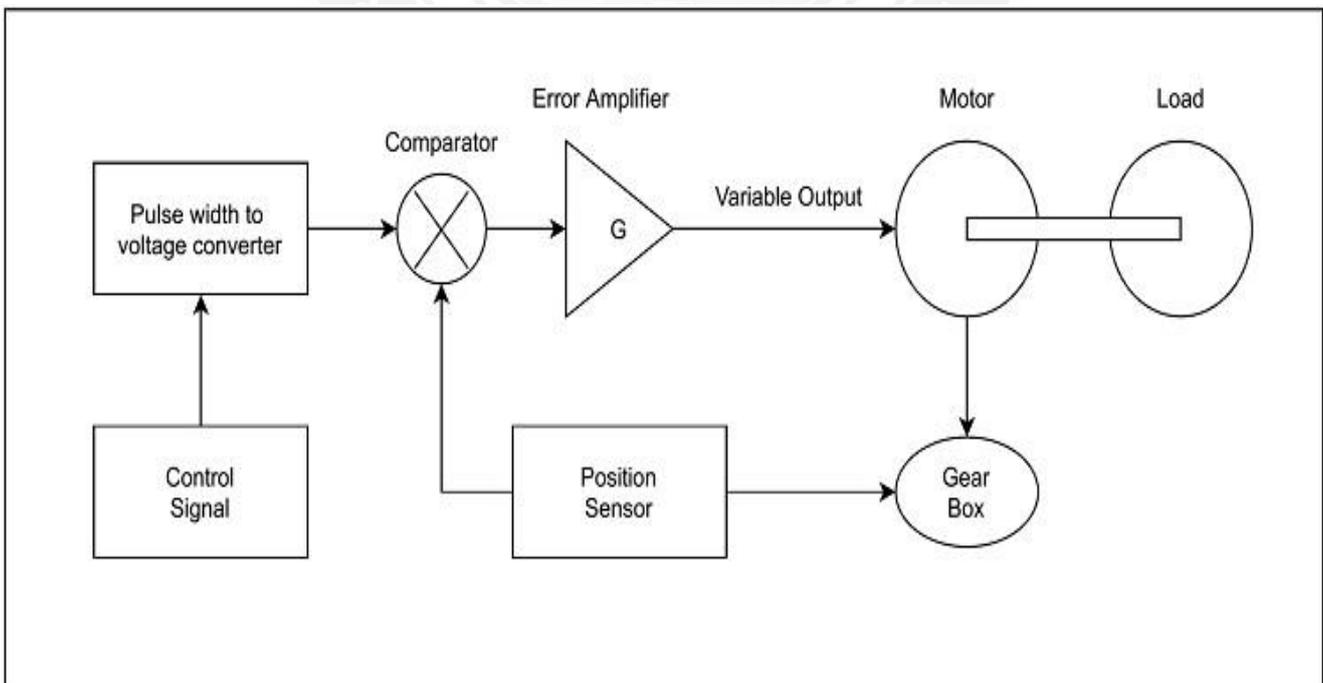
## 5.2 SERVO MOTOR CONTROL

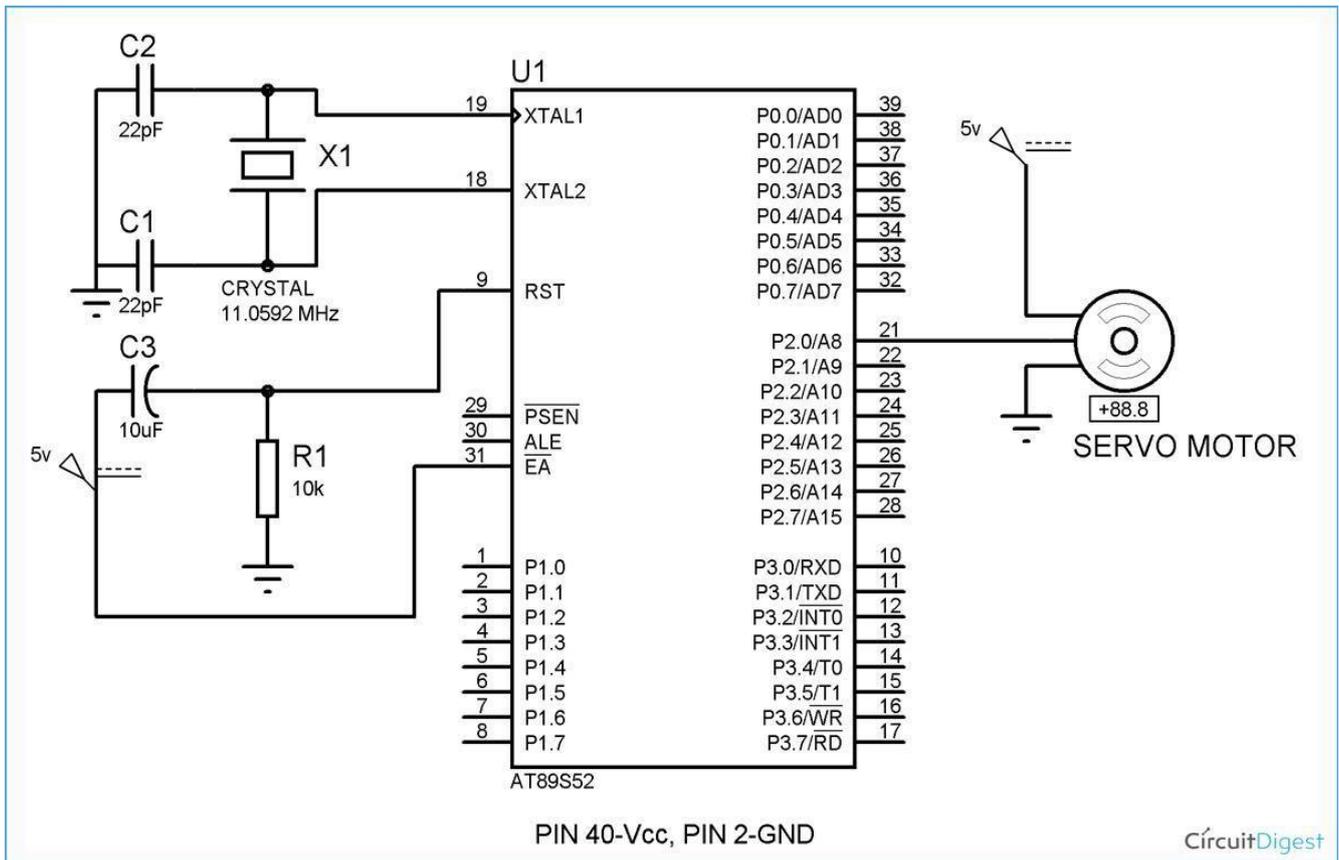
Servo motors are self-contained mechanical devices that are used to control the machines with machines. Usually the servo motor is used to control the angular motion among from  $0^\circ$  to  $180^\circ$  and  $0^\circ$  to  $90^\circ$ . The servo motor working principle based on the PWM (pulse width modulation) pulses.

A Servo motor is one of the most commonly used motor for precise angular movement. The advantage of using a servo motor is that the angular position of the Modulated (PWM) waves as control signals. The angle of rotation is resolute by the pulse width of the control pin.

### Servo Motor Working Principle:

The servo motor working principle mainly depends upon the „Fleming left hand rule“. Basically servo motors are adapted with DC motors, a position sensor, a Gear reduction, and an electronic circuit. The DC motors achieve powered from a battery and run at high speed and low torque. We assembled shaft and gear connected to DC motors then we can increase and decrease the motor speed gradually.





The position sensor senses the location of the shaft from its fixed position and sends the information to the control circuit. The control circuit decodes the signals accordingly from the position sensor and compares the actual location of the motors with the preferred position and accordingly controls the direction of rotation of the DC motor to get the necessary position. Generally the servo motor requires 4.8V to 6 V DC supply.