Servo Motor

A servo motor is a rotary actuator or motor that allows for precise control of angular position, velocity, and acceleration.

Working Principle:

Servo motors work on the principle of feedback. They receive a control signal (typically PWM), move to the desired angle, and send feedback to maintain position. They consist of a motor, control circuit, and a potentiometer for position sensing.

Types:

- Positional Rotation Servo
- Continuous Rotation Servo
- Linear Servo

Applications:

- Robotics (arms, joints)
- RC cars, boats, planes
- Camera gimbals
- Automation systems
- Actuators in embedded systems

Advantages:

- High torque in small size
- Accurate position control
- Easy to interface with microcontrollers

Disadvantages:

- Limited range (usually 0°–180°)
- More expensive than DC motors
- Requires PWM signal to operate

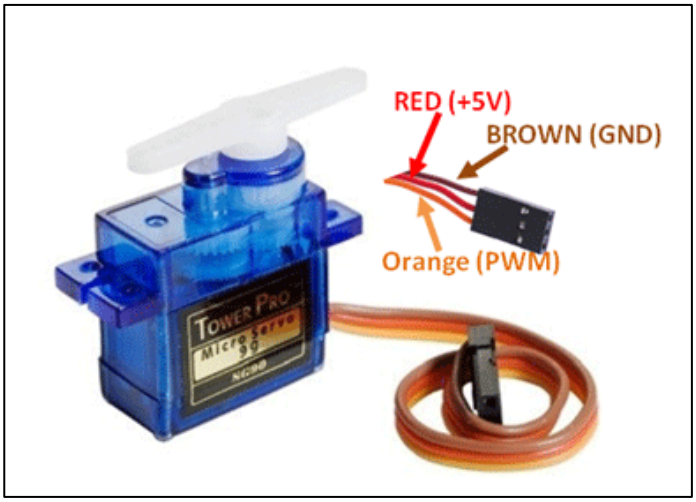

Fig: Servo Motor SG90 180