

Electric Motor

Definition: Electric motor is the electro-mechanical machine which converts the electrical energy into mechanical energy. In other words, the devices which produce rotational force is known as the motor. The working principle of the electric motor mainly depends on the interaction of magnetic and electric field. The electric motor is mainly classified into two types. They are the AC motor and the DC motor. The AC motor takes alternating current as an input, whereas the DC motor takes direct current.

Types of Electric Motor motor.

DC Motor

AC Motor

AC Motor

The AC motor converts the alternating current into mechanical power. It is classified into three types; they are the induction motor, synchronous motor, the linear motor. The detail explanation of the motor is expressed below.

Types of AC Motor

AC motors are mainly classified into three types and they are,

(1) Synchronous Motor

(2) Asynchronous or Induction Motor

(3) Linear Motor

1. Induction Motor

The machine which never runs at synchronous speed is called the induction or asynchronous motor. This motor uses electromagnetic induction phenomenon for transforming the electric power into mechanical power. According to the construction of rotor, there are two types of an induction motor. Namely squirrel cage induction motor and phase wound induction motor.

(2) Synchronous Motor

The synchronous motor changes the alternating current into mechanical power at the desired frequency. In this motor, the speed of the motor is synchronised with the AC frequency. These motors mainly depend on the three-phase supply. In this, the motor speed is the constant speed at which the motor generates an electromotive force.

Types of DC Motors

(1) Brushed DC Motor

In this motor, the stator brush arrangement determines the current flow. Its torque is produced from the DC power supply using electromagnets. They are cheap and highly efficient.

High-starting torque machines like cranes, hoists, and lifts use brushed DC motors. They are also applicable for constant speed purposes like vacuum cleaners and conveyors.

(2) Brushless DC Motor

These motors achieve high performance while reducing their size compared to brushed DC motors. They operate using slip rings, commutators, or an embedded controller.

Their efficiency, improved dynamic response, noiseless operation, and high-speed changes make them an excellent choice for most industries. Fixed load, varying load, and positioning depend on this type of motor.

More Types of Motors

(1) Servo Motors

(2) Stepper Motor

(3) Hysteresis Motor