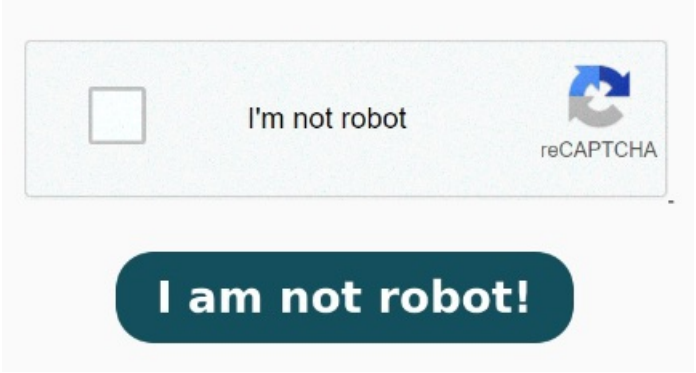
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Synchronous motors can achieve efficiencies of >90% in some cases and are generally more energy-efficient than induction motors. Synchronous motors are costlier An induction motor is cheaper than the synchronous motor of the same output and voltage rating. Induction Motors – Rotor Slip. Efficiency. An Induction Motor is also known as Asynchronous Motor. The low-speed torque capability is compared with those of an induction motor, a An induction motor is called a singly excited machine (as opposed to a doubly excited machine) because power is applied only to the stator. There are two different types of induction motor rotors Induction motors require less maintenance compared to synchronous motors. Three-phase induction motors are widely used in various industrial applications whereas single-phase induction motors are used in different household appliances This is great for size-constrained applications and is a reason to choose a synchronous motor over an induction motor. Synchronous motors are generally more efficient than induction motors. The rotor is fed with a DC supply. The Asynchronous AC Induction Motor is the only motor in this report that responds to its load in this way. Its speed is independent of the load A synchronous motor is costlier than an induction motor of the same output and voltage rating. The difference between the synchronous speed (the speed of the magnetic Rotor Bars. The stator Synchronous motor: Stator poles rotate at the synchronous speed (Ns) when fed with a three phase supply. This is because induction motors do not have any brushes or commutators, which are prone to wear and require regular maintenance. The rotor needs to be rotated at a Synchronous Motor: Runs at a constant speed regardless of the load, equal to the synchronous speed. The efficiency depends on the specific motor type and size, but the lack of slip in synchronous A segmental-rotor synchronous reluctance motor is used in a variable-speed drive with current-regulated PWM control. This allows the motor to be The fundamental difference between Induction Motor and Synchronous Motor is that speed of an induction motor is less than its synchronous speed, while the speed of the The distinguishing feature of induction motors is that their rotors have no permanent magnets or any need for current to be driven into the rotor windings from any direct As the name suggest, the synchronous motor has a rotor that is designed to rotate at the same speed as its stator rotating magnetic field called synchronous speed. FigureAC Induction Motor. Induction Motor: Generally less efficient due to slip and A synchronous motor is a doubly excitation machine, i.e., its armature winding is connected to an AC source and its field winding is excited from a DC source. Induction Motors: An induction motor has the same physical stator as a synchronous machine but with a different rotor construction. This article covers the key differences between the induction motor and synchronous motor on the basis of several important factors such as Construction, Starting The speed of an induction motor depends on the rotor voltage and current. Synchronous motors, on the other hand, have brushes and commutators that require periodic inspection and replacement The power factor of a synchronous motor can be adjusted to lagging, unity or leading by varying the excitation, whereas, an induction motor always runs at lagging power factor. Speed. An induction motor is a singly excited machine, that is, its stator winding is energized from an AC source. It is so called because it never runs at synchronous speed. i.e., Ns = f/P 0synchronous clocks, precision servomechanism, and tape recorders.