

SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A+ Grade **Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai**

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME: 19EET207/ SYNCHRONOUS AND INDUCTION MACHINES

II YEAR / IV SEMESTER

Unit 3 – THREE PHASE INDUCTION MOTOR

Topic 1: Constructional details-Types of rotors



20.2.2023

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GUESS THE TOPIC NAME...



3 Phase Induction Motor



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INDUCTION MOTORS

Three-phase induction motors are the most common and frequently encountered machines in industry

design, rugged, low-price, simple easy ntenance

range of power ratings: fractional – wide horsepower to 10MW

- run essentially as constant speed from no-load to full load

 Its speed depends on the frequency of the power source

not easy to have variable speed control

 requires a variable-frequency powerelectronic drive for optimal speed control

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Construction of 3-Phase Induction Mot Marter Shoft

INDUCTION MOTOR-CONSTRUCTION

An induction motor has two main parts

- **-a** stationary stator
- consisting of a steel frame that supports a hollow, cylindrical core
- core, constructed from stacked laminations (why?), having a number of evenly spaced slots, providing the space for the stator winding

– a revolving rotor

- composed of punched laminations, stacked to create a series of rotor slots, providing space for the rotor winding
- one of two types of rotor windings
- conventional 3-phase windings made of insulated wire (wound-rotor) similar to the winding on the stator
- aluminum bus bars shorted together at the ends by two aluminum rings, forming a squirrel-cage shaped circuit (squirrel-cage)

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INDUCTION MOTOR: Rotor

Two basic design types depending on the rotor design

- squirrel-cage: conducting bars laid into slots and shorted at both ends by shorting rings.

- wound-rotor: complete set of three-phase windings exactly as the stator. Usually Yconnected, the ends of the three rotor wires are Induction Motor connected to 3 slip rings on the rotor shaft. In this way, the rotor circuit is accessible.









Field Excitation and Exciters

Squirrel cage rotor





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Wound rotor





SUMMARY

Construction, Types of Rotors of Induction Motors

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KEEP LEARNING.. Thank u

SEE YOU IN NEXT CLASS

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