



# **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: 23EEB210 / Electrical Machines and Drives**

**II YEAR / IV SEMESTER**

**Unit V – SOLID STATE SPEED CONTROL OF A.C DRIVES**

**Topic : Digital control of Reluctance motor**



# Digital control of Reluctance Motor

Digital control of reluctance motors, particularly switched reluctance motors (SRMs), uses digital systems to precisely control the switching of stator windings and achieve desired motor performance. This approach allows for advanced control strategies and efficient motor operation.



# Digital control of Reluctance Motor

## **Position Sensing:**

Digital controllers often use sensors like incremental encoders or Hall-effect sensors to determine the rotor's position. This information is crucial for timing the switching of stator windings.

## **Switching Control:**

The controller uses digital logic and power electronic components (like IGBTs) to switch the stator windings in a specific sequence. This switching creates a rotating magnetic field that pulls the rotor.



# Digital control of Reluctance Motor

## **Pulse-Width Modulation (PWM):**

Digital controllers can use PWM to adjust the voltage and current delivered to the stator windings, allowing for fine-tuning of torque and speed.

## **Control Algorithms:**

Advanced algorithms can be implemented in the controller to optimize performance, such as minimizing torque ripple, achieving desired speed profiles, and controlling current.



# Digital control of Reluctance Motor



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KEEP  
LEARNING.

Thank u

SEE YOU IN NEXT CLASS