



# **SNS COLLEGE OF ENGINEERING**

Kurumbapalayam (Po), Coimbatore – 641 107

**An Autonomous Institution**

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**

**19EE504 - SPECIAL ELECTRICAL MACHINES**

**UNIT – 1**

**PERMANENT MAGNET BRUSHLESS DC MOTOR**



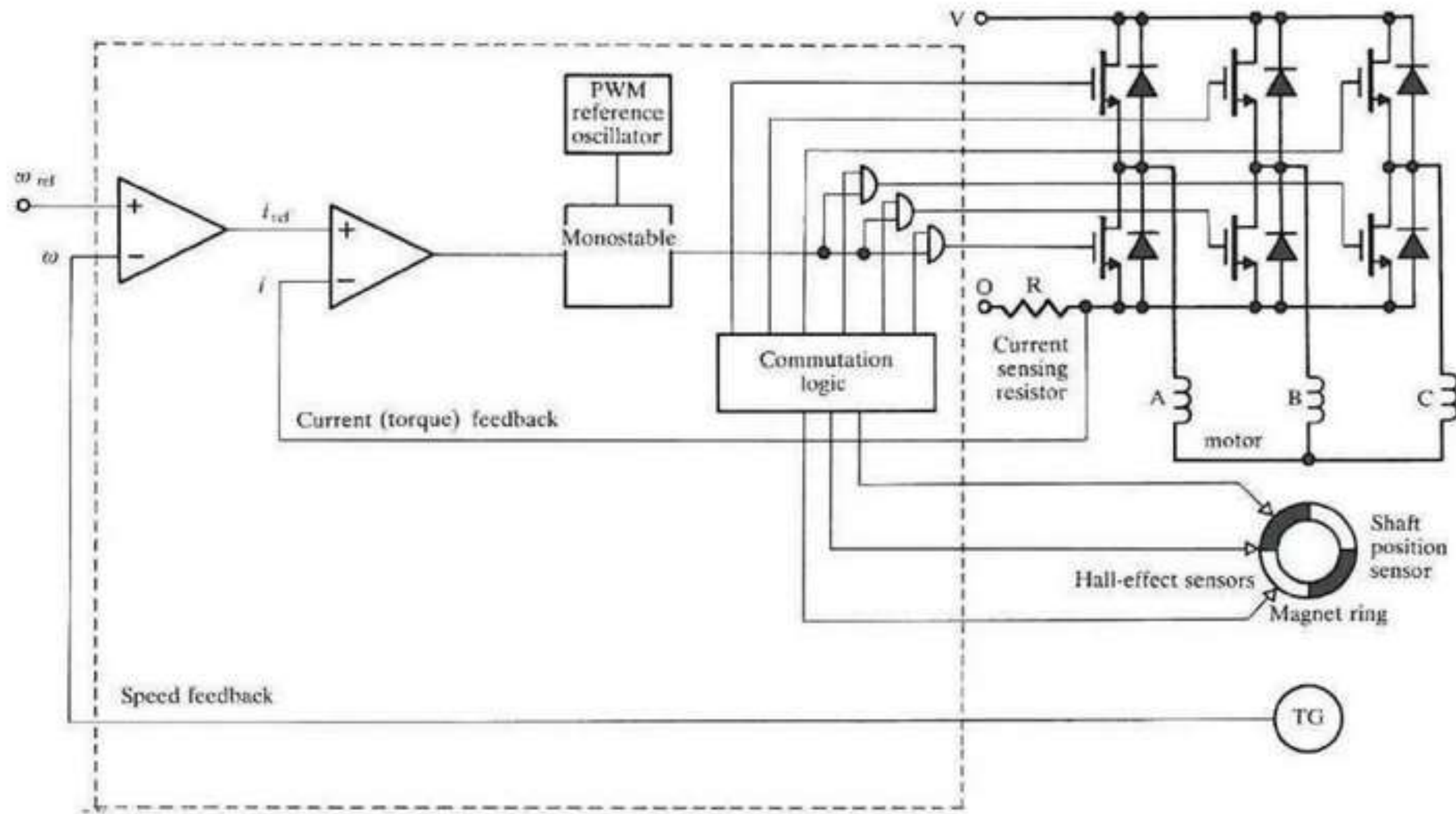


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➤ Controller for PMBLDC motor

# Controller for PMSBLDC motor





# Controller for PMSBLDC motor

- The rotor shaft position is sensed by Hall effect sensor.
- These signals are decoded by combinational logic to provide the firing signals for 120 degree conduction on each phases.
- The rotor position sensor has 6 outputs which control the upper and lower leg transformers.
- Programmable logic arrays, EPROMs are suitable for this function.



# Controller for PMBLDC motor

- The PWM is applied only to the lower phase leg transistors.
- This is not only to reduce the current ripple but also avoids the need for wide bandwidth in level shifting circuit that feeds the upper leg transistors.
- Use of AND gates is a simple way to combine the commutation and chopping signals.
- The output signal influences the conduction period and duty cycle
- Thus the desired speed can be achieved.

