





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: 16EE214/ELECTRICAL MACHINES AND DRIVES

III YEAR / VI SEMESTER

UNIT 1- OVERVIEW OF ELECTRICAL DRIVE

Topic 1– Basic Elements



SUCCESSFUL STUDENT

Positive
Attitude

Professionally
Groomed

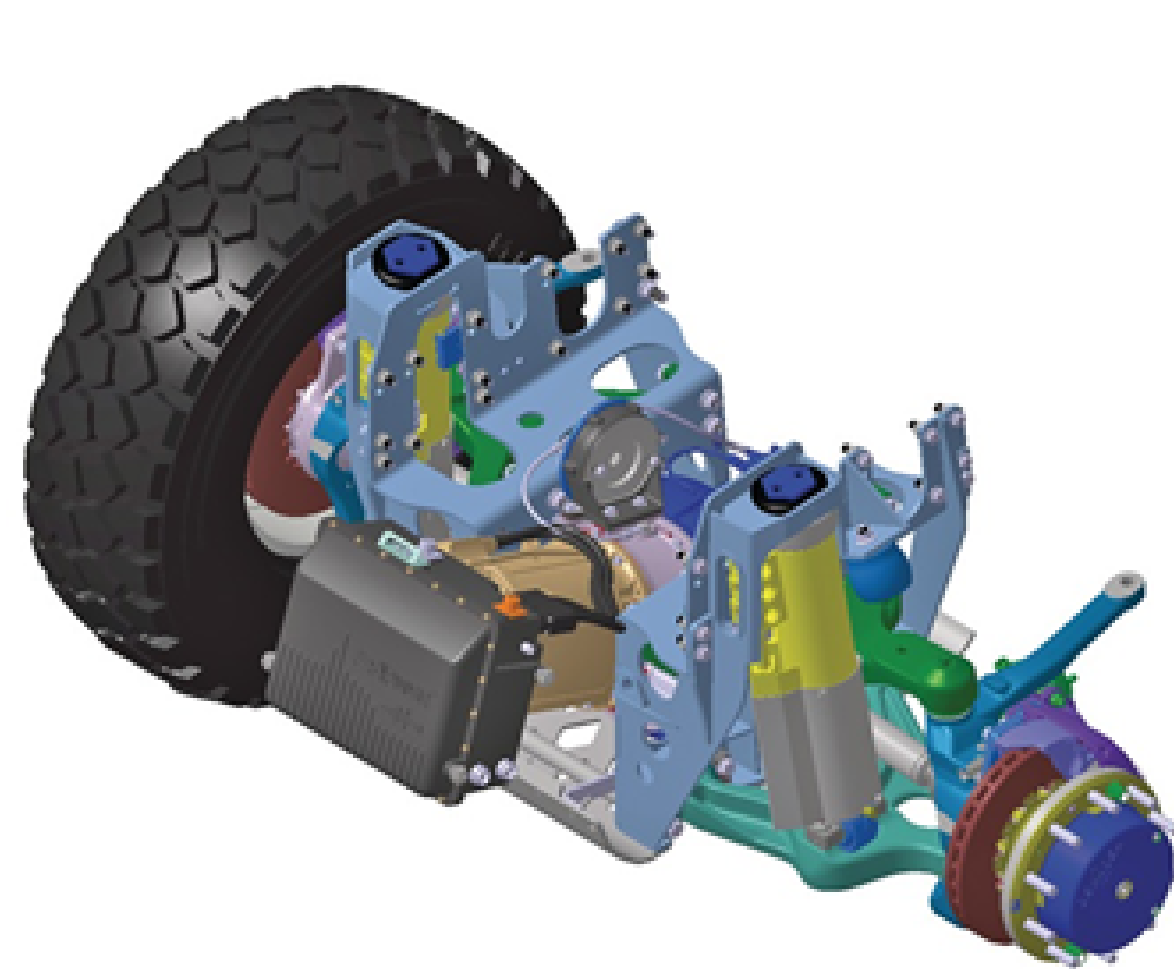
Socially
Interactive

Technically
Skillful



Drives

The speed of rotation of an electrical machine can be controlled by implementing the concept of drive.





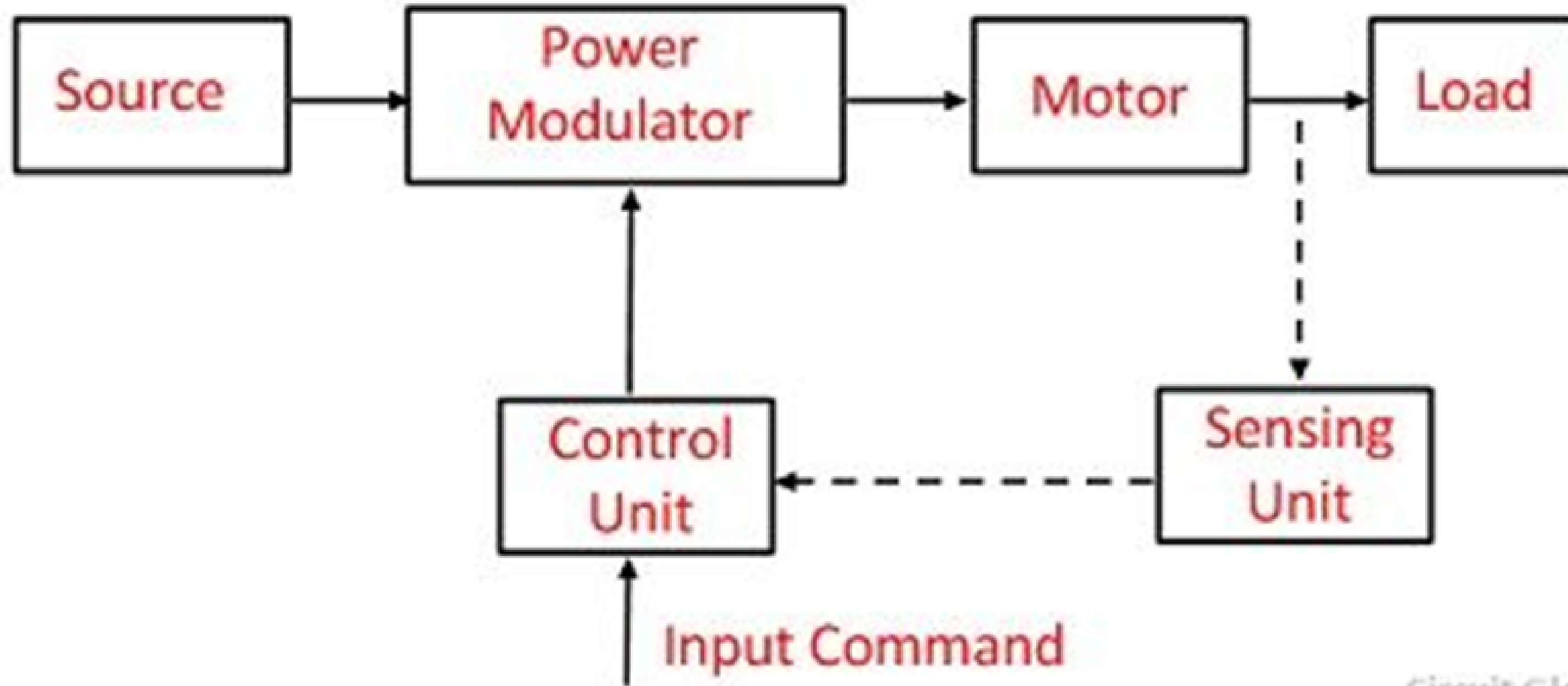
Electric Drive

- System employed for motion control is called as a drive
- Drives employing Electric motors are called as electric Drive





Basic Elements



Circuit Globe



Power Modulator

- The power modulator regulates the output power of the source.
- It controls the power from the source to the motor
- During the transient operations like starting, braking and speed reversing, the power modulator restricts the source and motor current.





Power Modulator



- The power modulator converts the energy according to the requirement of the motor
- e.g. if the source is DC and an induction motor is used then the power modulator converts DC into AC.
- It also selects the mode of operation of the motor, i.e., motoring or braking.

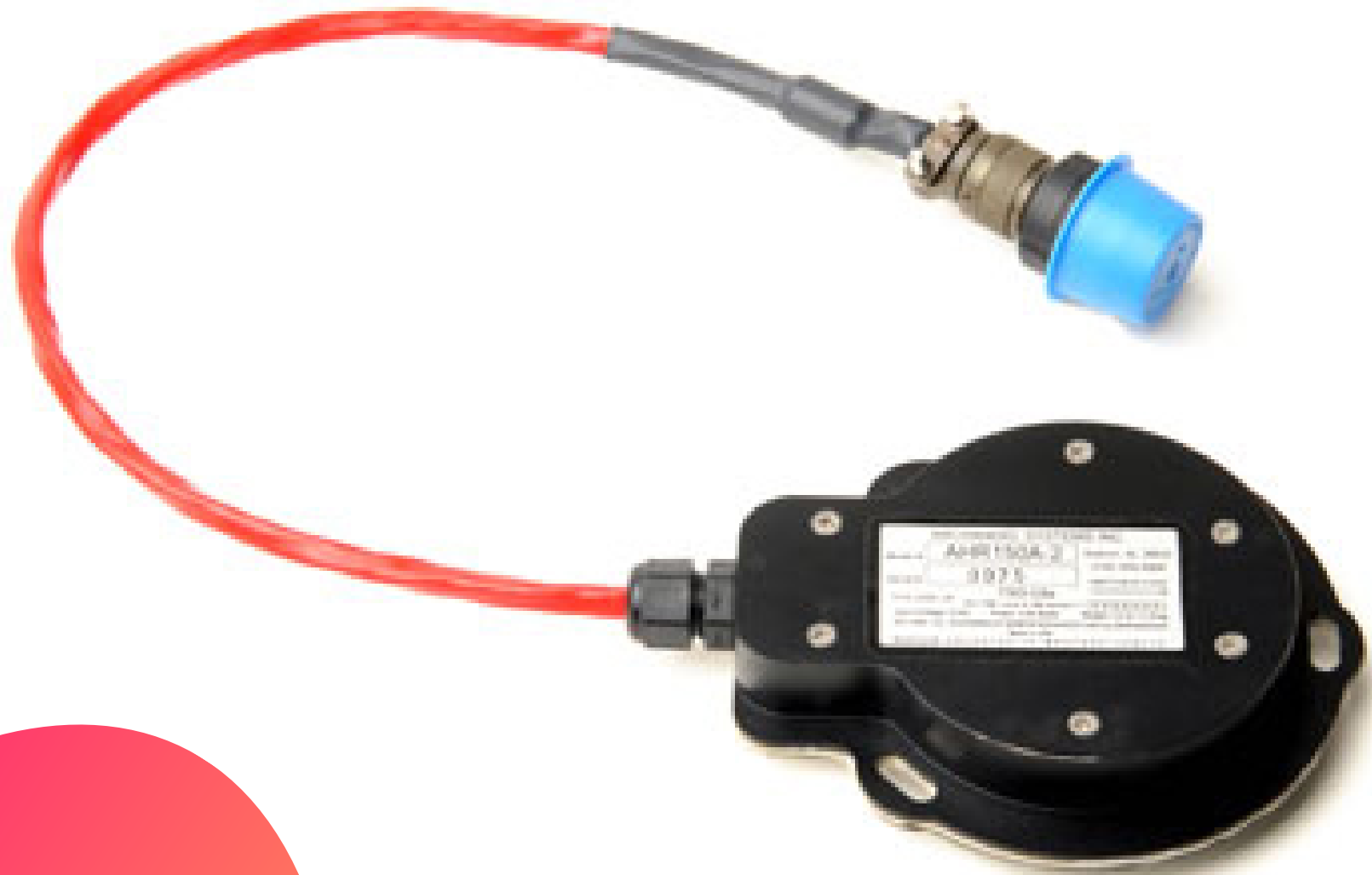


Control Unit

- The control unit controls the power modulator which operates at a small voltage and power level.
- It also generates commands for the protection of power modulators and motor.
- An input command signal which adjusts the operating point of the drive, from an input to the control unit.



Sensing Unit



- The sensing unit in the block diagram is used to sense the particular drive factor such as speed, motor current.
- This unit is mainly used for the operation of closed loop otherwise protection.



Motors



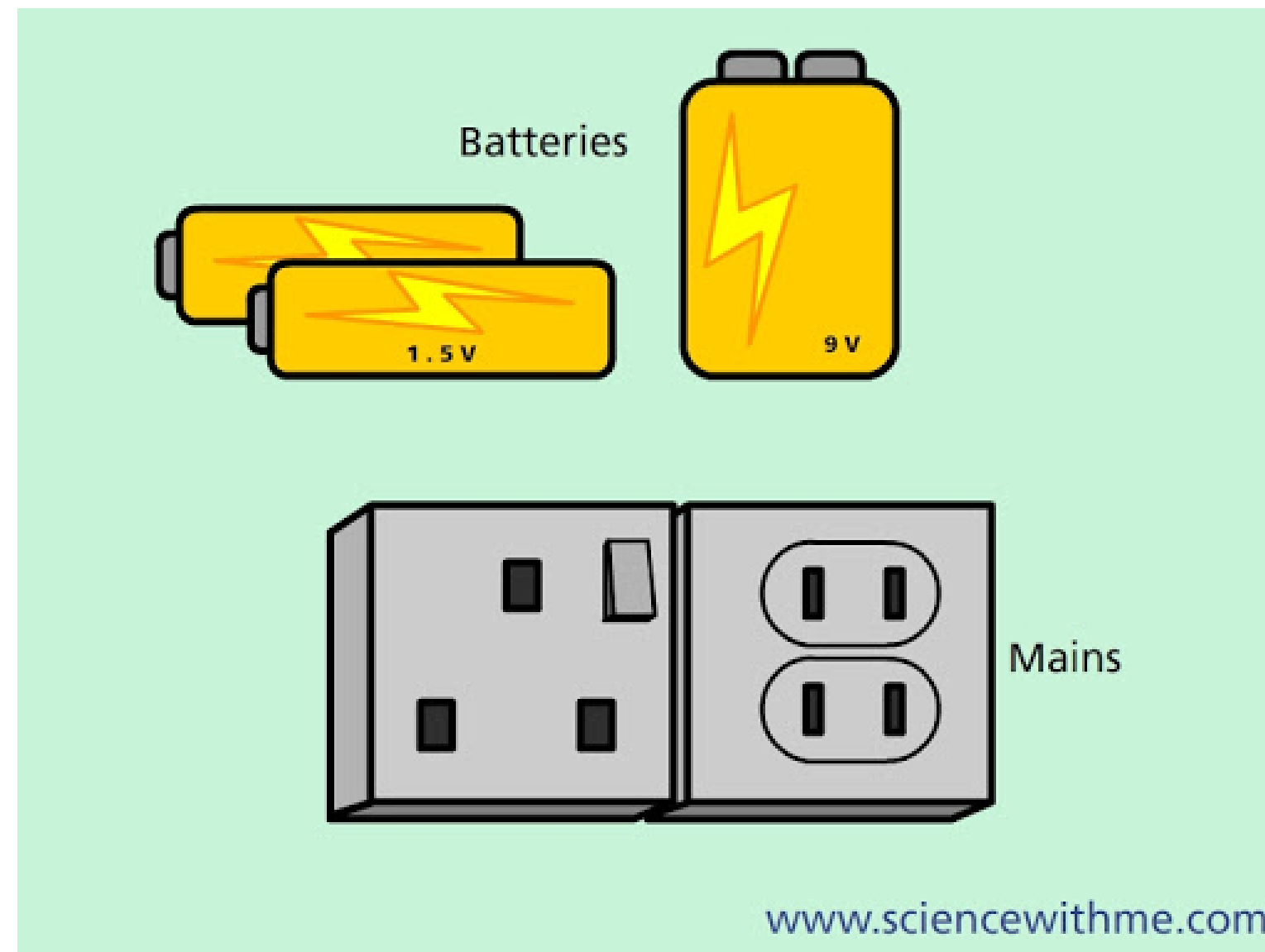
- AC Motor
- DC Motor
- Special Electrical Machines





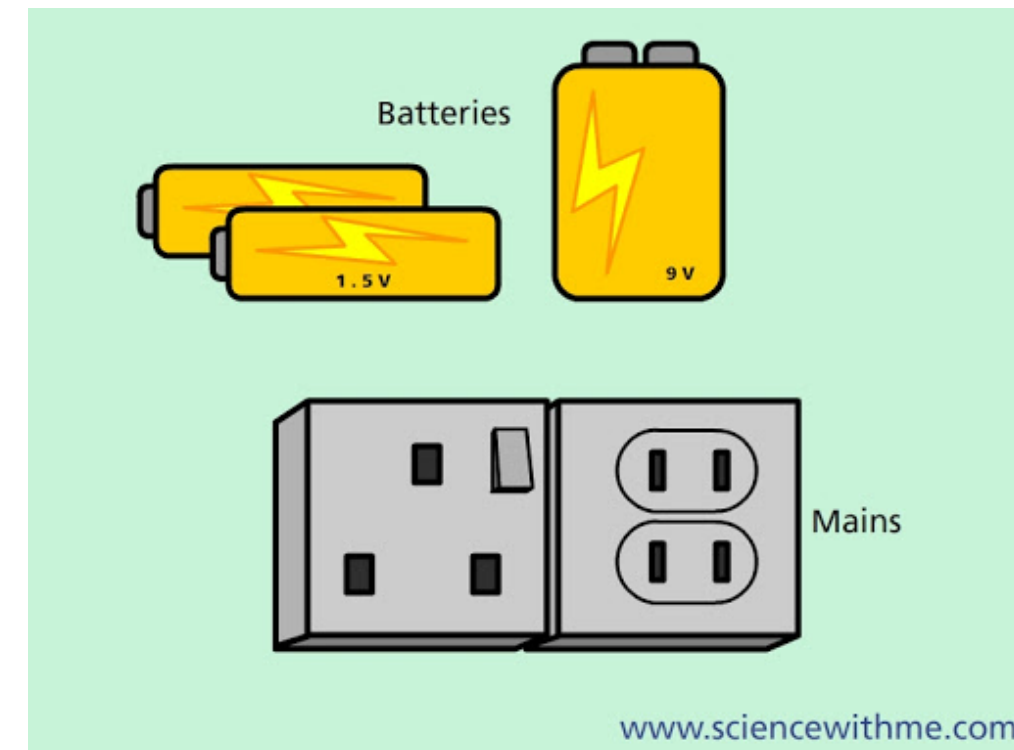
Source

- AC Source
- DC Source





ASSESSMENT





REFERENCE



- D.P.Kothari and I.J.Nagrath, “Basic Electrical Engineering”, Tata McGraw Hill publishing company ltd, second edition, 2007
- S.K.Pillai, “ A First Course on Electrical Drives” New age publishing Ltd, 1989. (UNIT I, IV,V)



THANK YOU!!