



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)



Basics Elements of Electrical Drive

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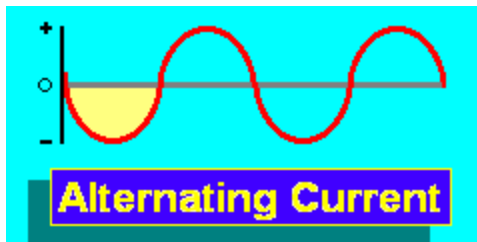


What is Motor.....?



Electrical Energy

(Rotational Force) Mechanical Energy





Define:



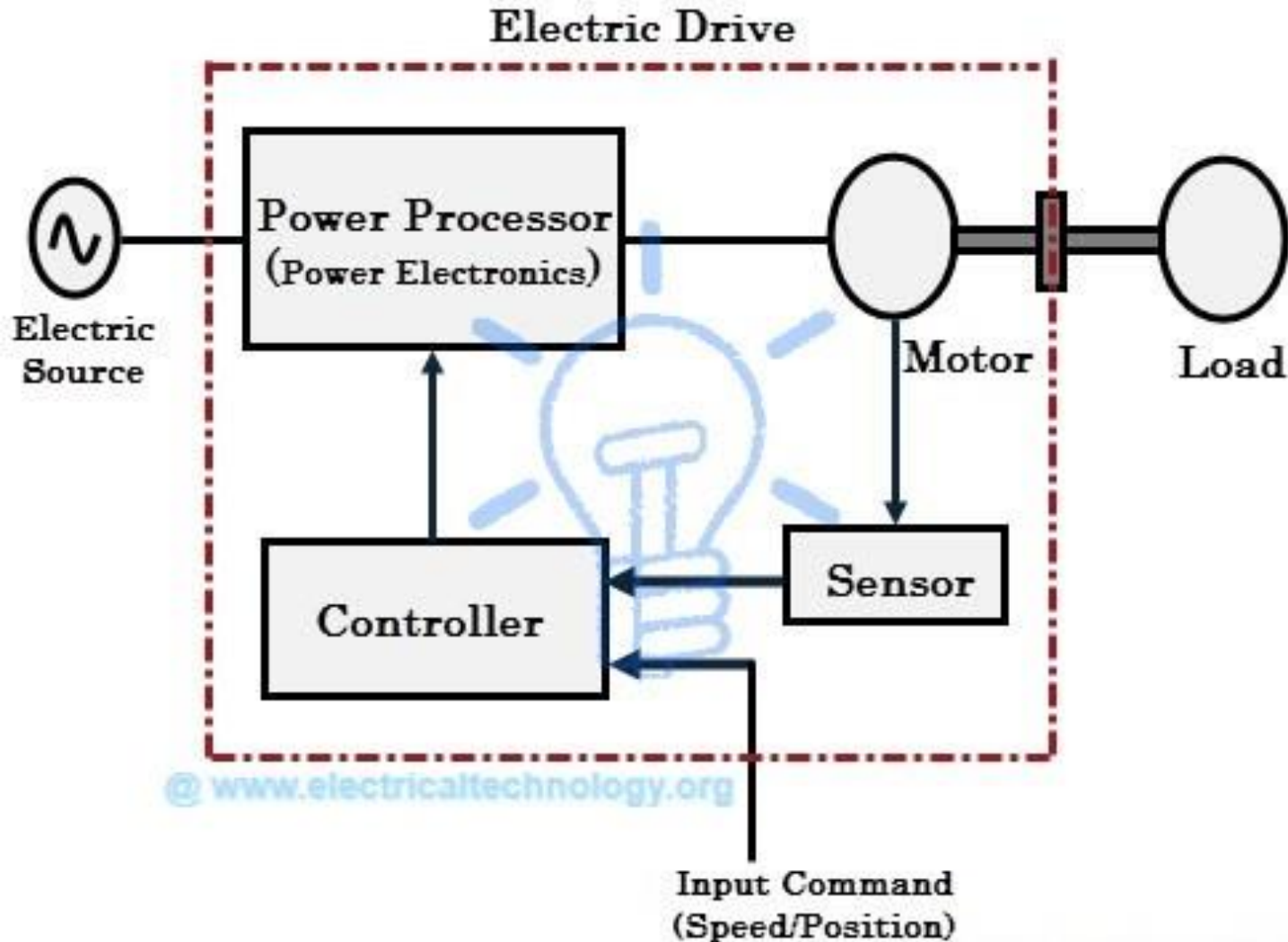
Electrical Drive

System employed for *motion control* of Electrical Motor is called Electrical Drives



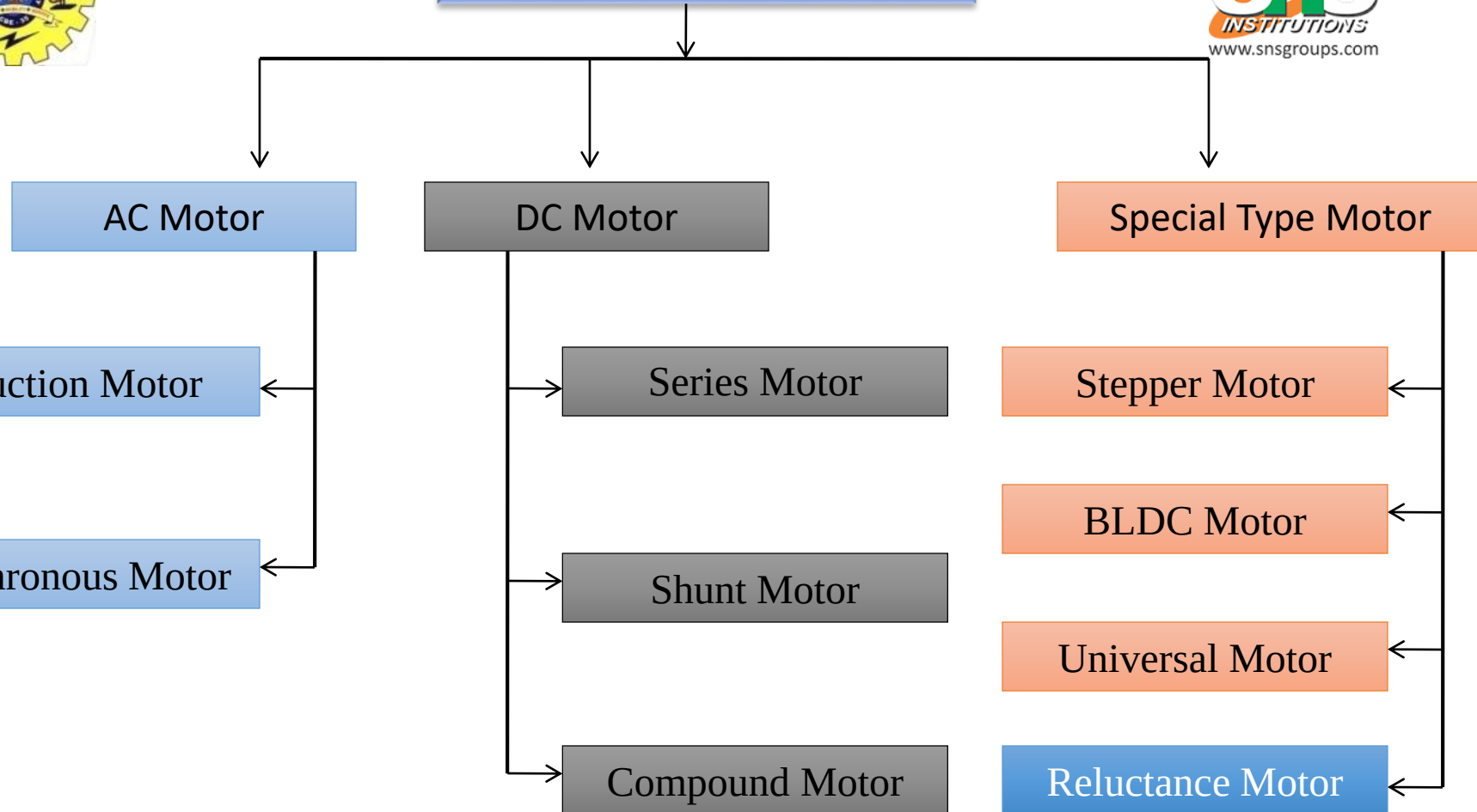


Block diagram for Electrical Drives





Types of Motor





Power Processor:

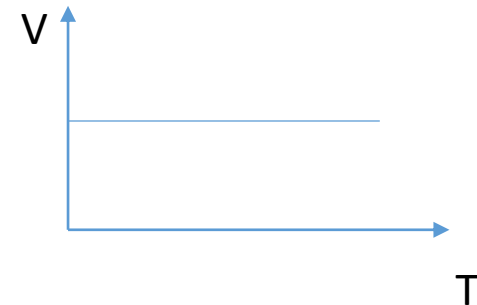
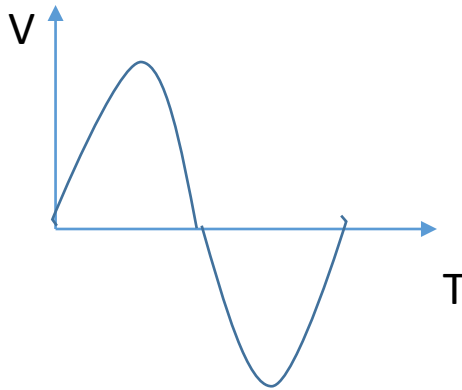
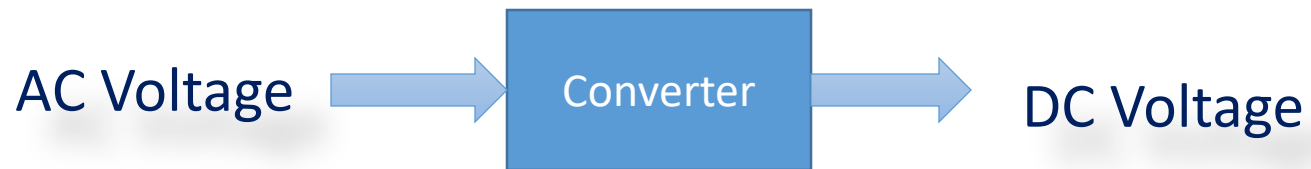
Conversion Process takes place

- Converter
- Inverter
- Chopper
- Cyclo converter



Converters

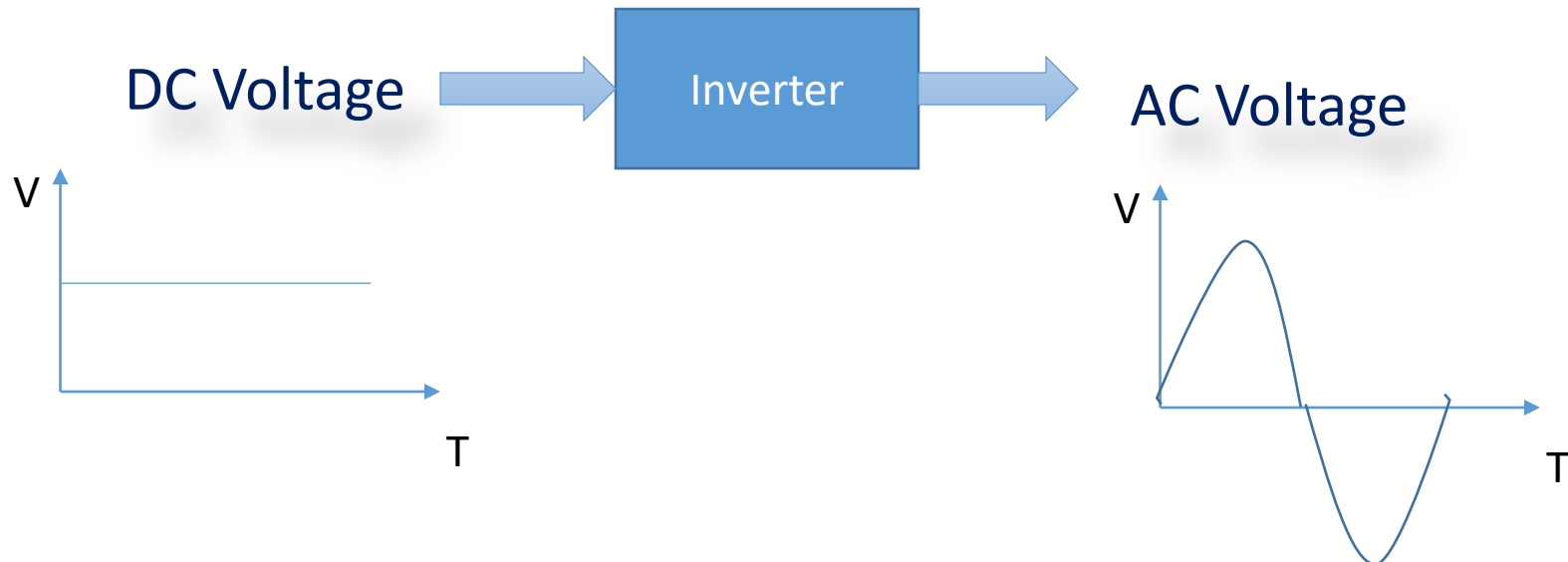
Converter is used to convert the AC Voltage into DC Voltage





Inverters

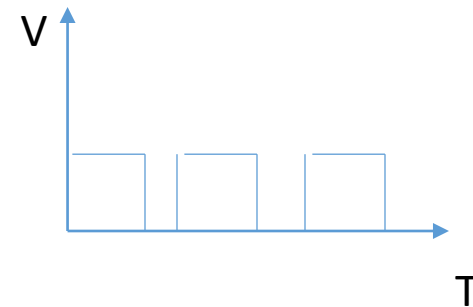
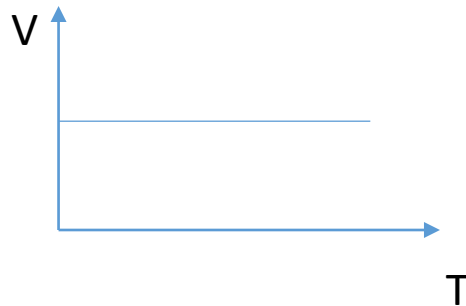
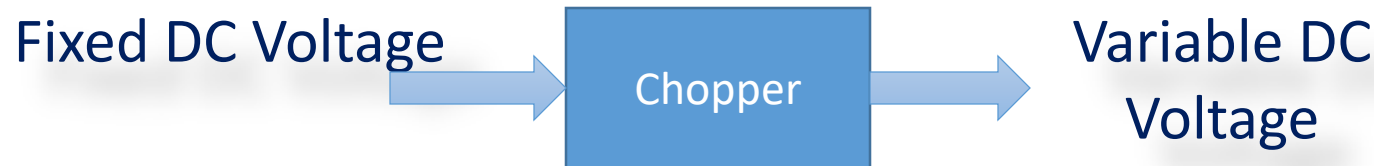
Inverter is used to convert the DC Voltage into AC Voltage





Chopper

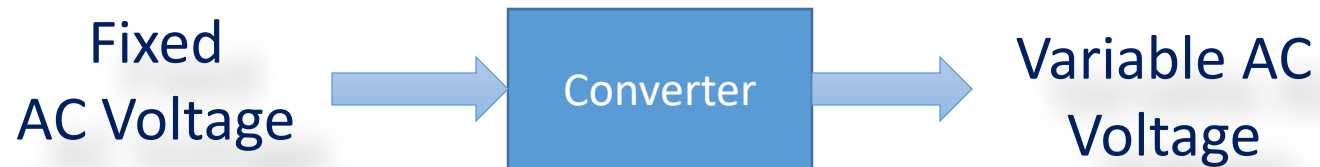
Chopper is used to convert the fixed DC Voltage into Variable DC Voltage





Cyclo Converters

Cyclo Converter is used to convert the Fixed AC Voltage into Variable AC Voltage





Electrical Source

- Current
- Voltage

AC

Voltage Rating:: 110V, 230V, 415V, 25KV

Current Rating:: 0.5A, 1A, 2A, 3A, 5A, 10A, 15A, 20A, 30A

Frequency-50Hz

Voltage Rating:: 5V, 6V, 12V, 24V, 48V, 220V

Current Rating:: 0.2A, 0.3A, 0.5A, 1.5A, **DC** 2A, 2.5A, 2A, 3A

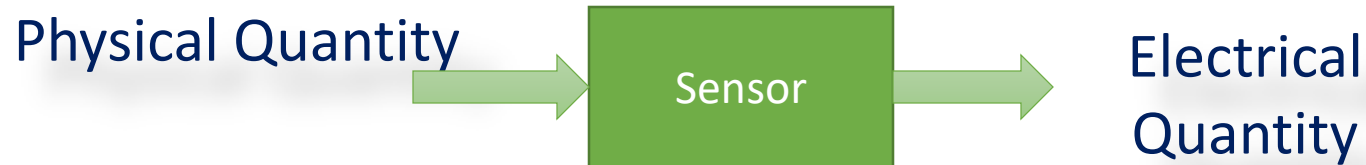
There is no Frequency





Sensing Unit

Sensor is used to sense the physical quantity and convert it to electrical quantity





Control Unit

- It controlling the system motion without any damages according to the sensing unit along with input command.
- Control unit consist of
 - digital integrated circuit,
 - Transistor and
 - Microprocessor



Load

- Normally loads are designed for accomplishing the given task.
- For example
 - Fan,
 - Pumps,
 - Robots,
 - Washing Machine