

CYCLOCONVERTERS



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CYCLOCONVERTER

- ⊖ A Device which converts input power at one frequency to output power at a different frequency with one-stage conversion.
- ⊖ AC to AC conversion
- ⊖ Developed in 1930 , GERMANY
- ⊖ Uses SCR (THYRISTORS)
- ⊖ Force commutation

TYPES

- ⊖ Step up cycloconverter ($F_o > F_s$)
- ⊖ Step down cycloconverter ($F_o < F_s$)
- ⊖ Single phase to single phase
- ♣ Mid-point cycloconverter
- ♣ Bridge type cycloconverter
- ⊖ Three phase cycloconverter

SINGLE PHASE CYCLOCONVERTER

⊖ Step up Cycloconverter:-

♣ LOW Frequency to HIGH Frequency

⊖ Step down Cycloconverter:-

♣ HIGH Frequency to LOW Frequency

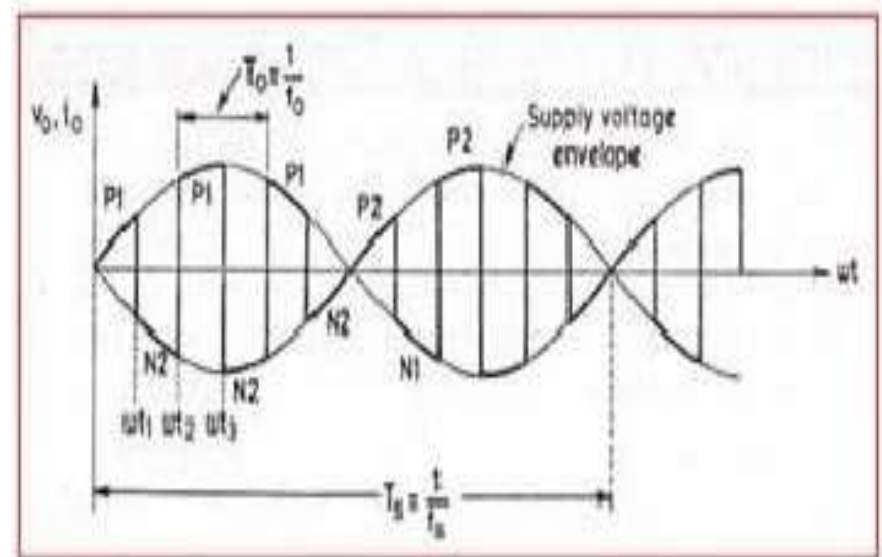
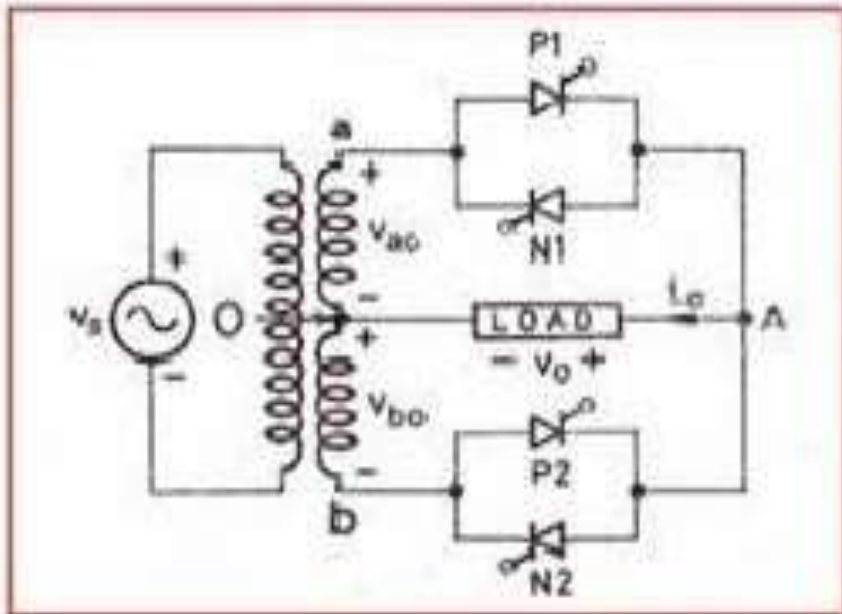
STEP-UP CYCLONVERTER

⊖ LOW TO HIGH FREQUENCY CONVERTER

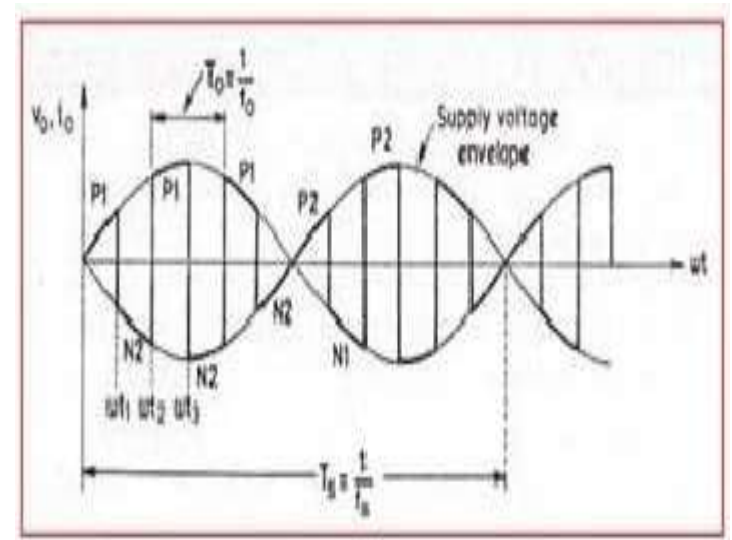
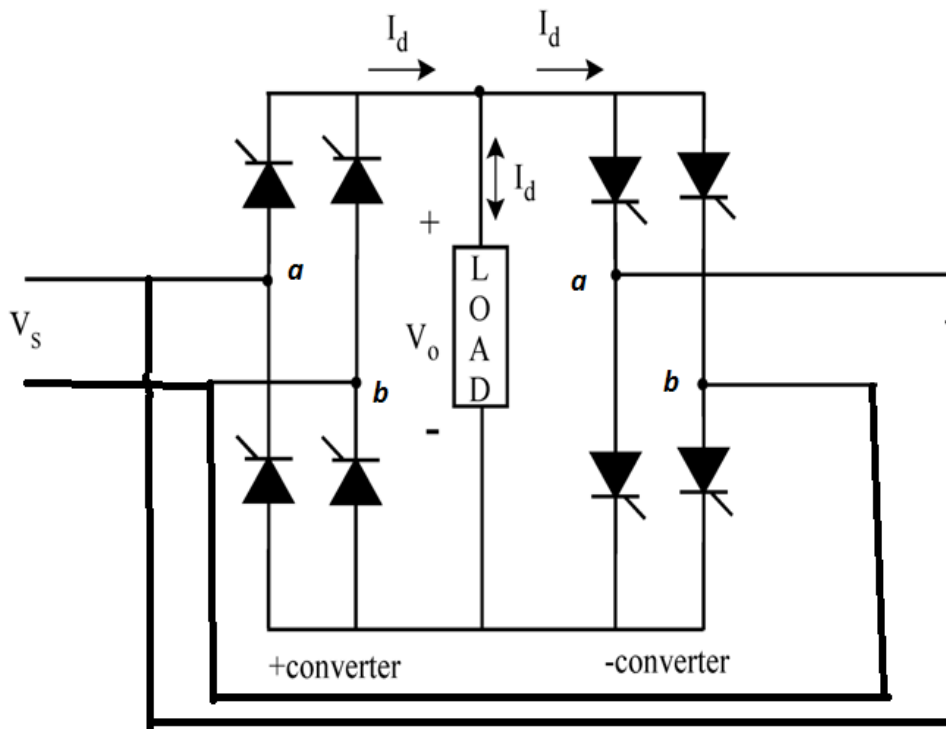
♣ MID-POINT CYCLOCONVERTER

♣ BRIDGE TYPE CYCLOCONVERTER

MID-POINT CYCLONVERTER



BRIDGE TYPE CYCLONVERTER



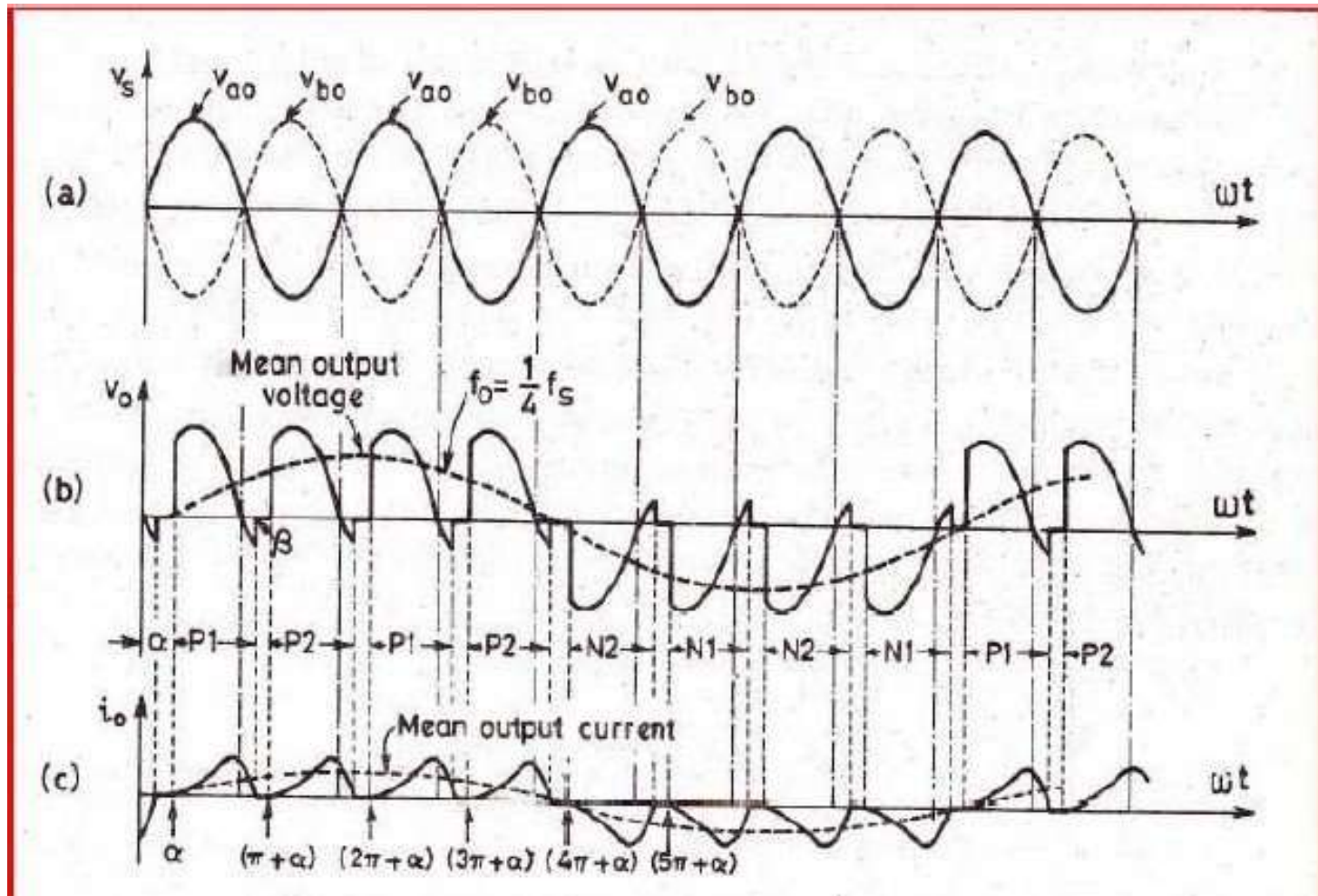
STEP-DOWN CYCLONVERTER

⊖ HIGH TO LOW FREQUENCY CONVERTER

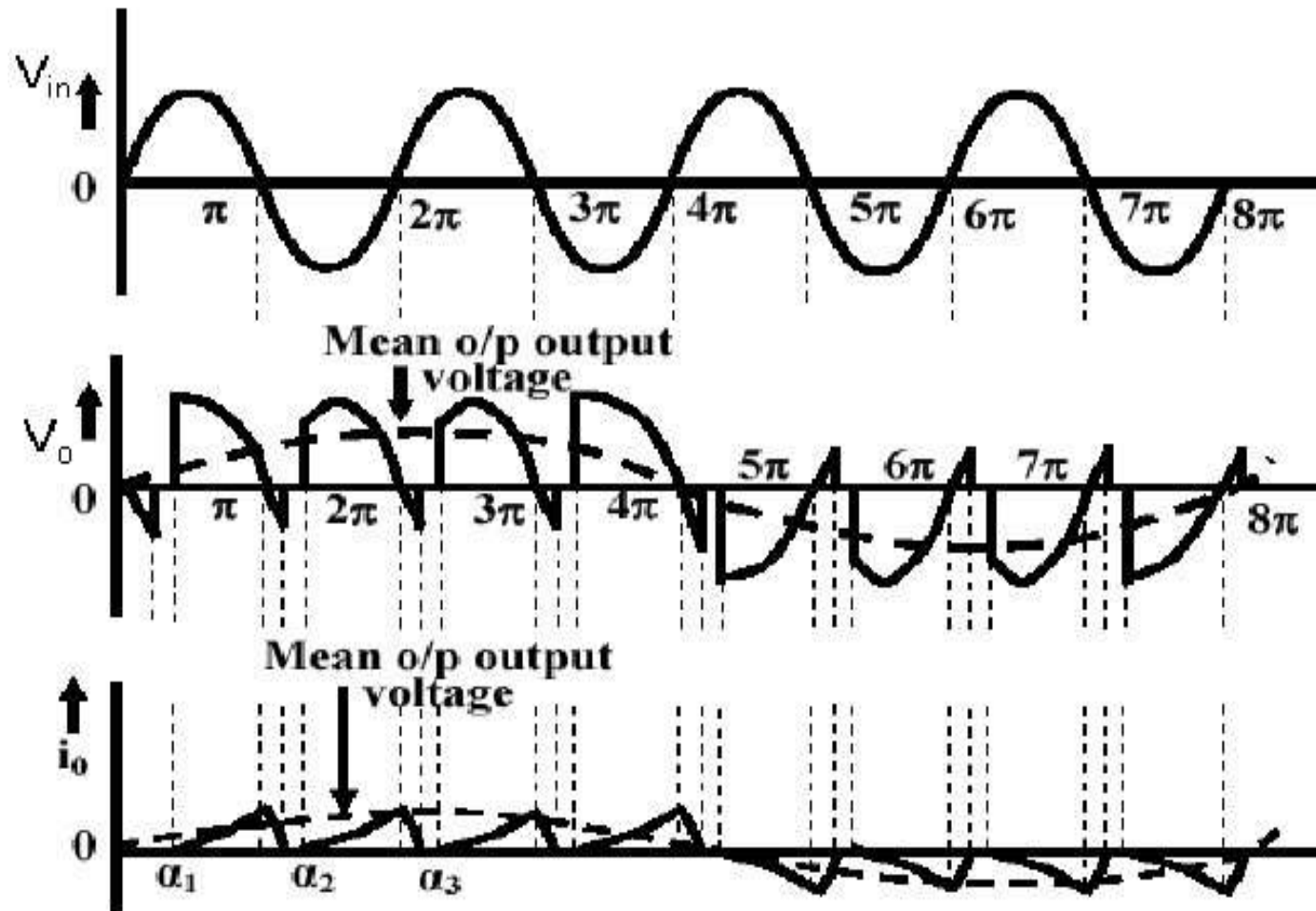
♣ MID POINT CYCLOCONVERTER

♣ BRIDGE TYPE CYCLOCONVERTER

MID-POINT CYCLONVERTER



BRIDGE TYPE CYCLONVERTER

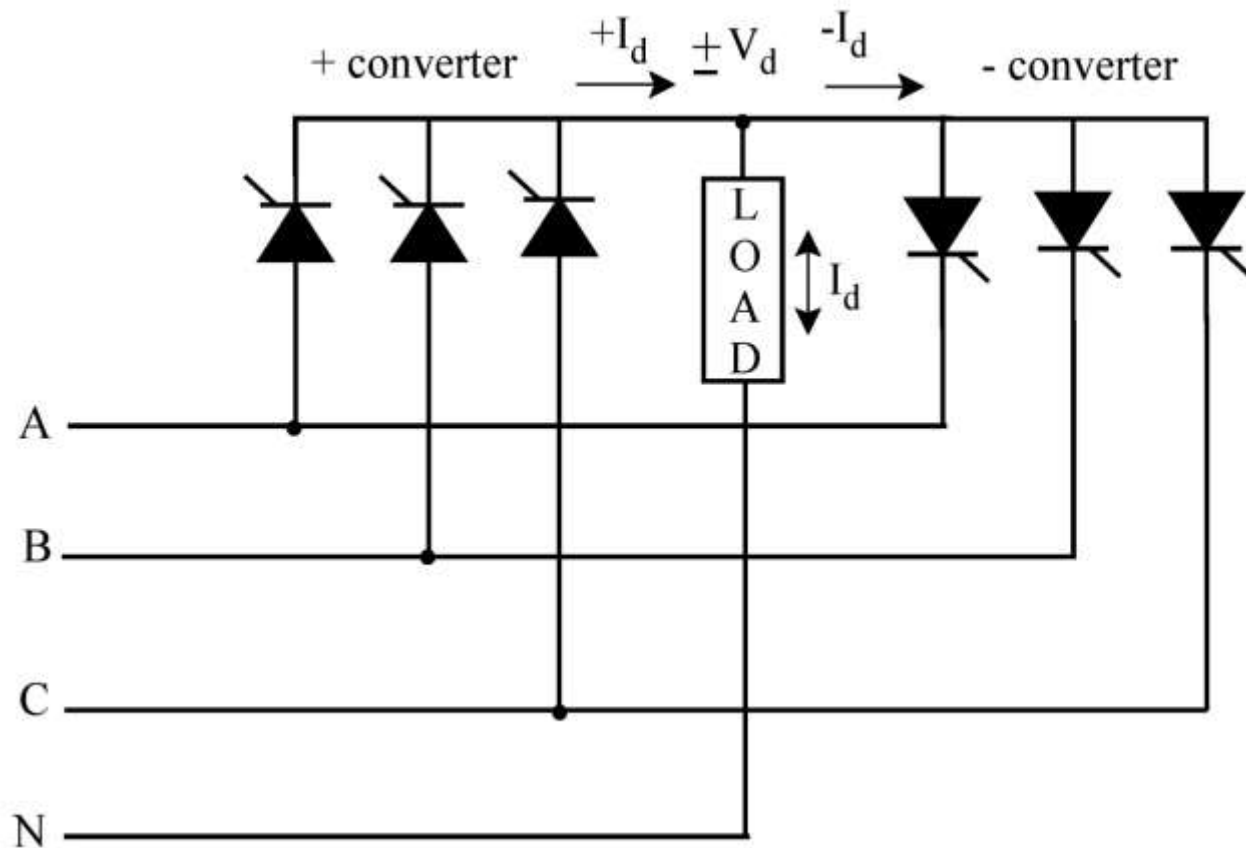


THREE PHASE CYCLOCONVERTER

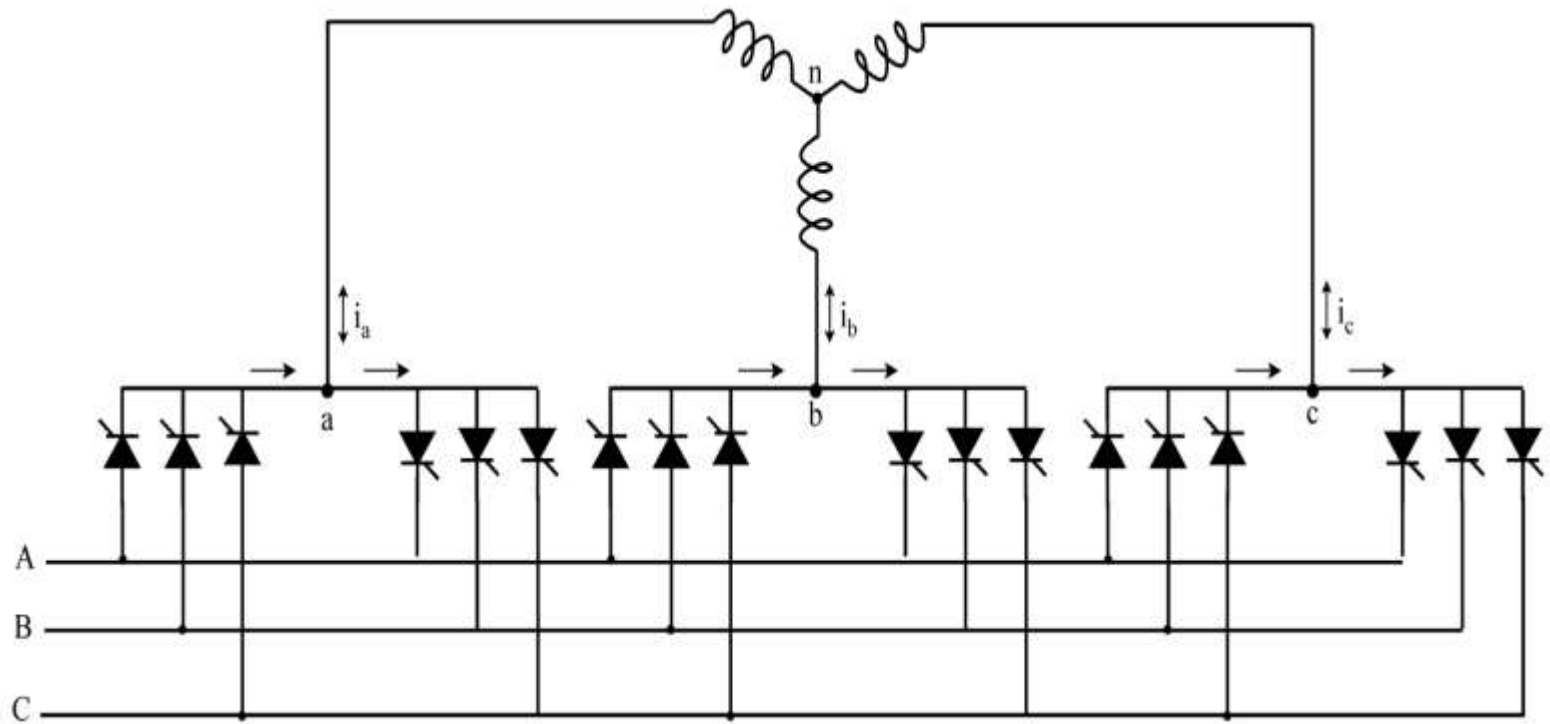
⊖ THREE PHASE TO SINGLE PHASE

⊖ THREE PHASE TO THREE PHASE

THREE PHASE TO SINGLE PHASE



THREE PHASE TO THREE PHASE



FEATURES

- Direct conversion
- Compact system
- Variable speed range
- High quality wave
- Low speed applications
- Large number of thyristors
- Complex circuitry
- Output frequency is limited

APPLICATIONS

- SPEED CONTROL DRIVES
- INDUCTION HEATING
- VARIABLE FREQUENCY INPUT AND GETTING CONSTANT OUTPUT