

Heaven's Light is Our Guide



Rajshahi University of Engineering & Technology

Department of Electrical & Computer Engineering

Lab Report

Experiment No: 04

Name of the experiment: Three Phase Sequence test using motor.

Course Code	1202
Course Title	Circuit & System – II Sessional

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Objectives:

To observe the three phase sequence by observing rotation of a motor.

Required Apparatus:

- A Motor
- Connecting Wires
- Voltage source

Theory: The phase sequence determines the direction of rotation in motors, with a clockwise or counterclockwise rotation depending on whether the sequence is ABC or CBA. Reversing the phase sequence (e.g., swapping any two phases) will reverse the direction of rotation of the motor. This makes checking the phase sequence important when connecting equipment to avoid potential issues with machinery.

In a balanced three-phase system, the voltages are separated by a phase angle of 120° .

The phase sequence is either ABC or CBA, depending on the order in which the phases reach their maximum values.

In an ABC sequence, phase A reaches its peak first, followed by phase B, then phase C.

In a CBA sequence, phase C reaches its peak first, followed by phase B, then phase A.

Diagram:

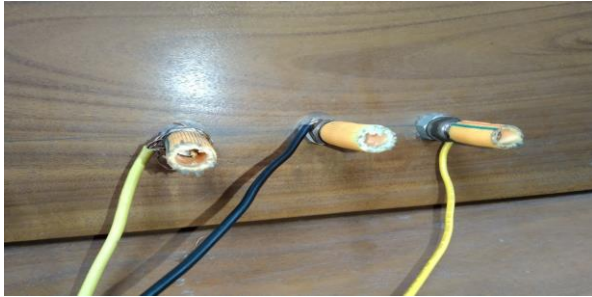


Fig.1: Delta Connection



Fig.2: Wye Connection

Results:



When the motor is rotating in the direction of clock or clockwise, we can say that the phases are in ABC sequence.

And when the motor is rotating in the reverse of clock or anti-clockwise, we can say that the phases are in ACB sequence.

Discussions:

At the time of changing two connections between three phases, we could observe the opposite rotation of the motor in both Wye and Delta connections. It was easy to decide that the sequence turned ABC to ACB. For the clockwise rotation it was ABC sequence and for anti-clockwise rotation it was ACB sequence.

Precautions:

- Stay away from the motor.
- Safely provide the connection to the voltage source.
- Carefully observe the rotation: