

Heaven's Light is Our Guide



Rajshahi University of Engineering & Technology

Department of Electrical & Computer Engineering

Lab report

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Submitted To:	Submitted By:
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Experiment Number: 05

Experiment Name: Three phase Sequence test using Bulb

Objectives:

To verify the phase sequence of a three-phase supply using a three-bulb method, ensuring the correct sequence of phases (ABC) in the system.

Theory:

In a three-phase system, phase sequence determines the order in which the voltages reach their peak values. The correct phase sequence (ABC) ensures the proper functioning of three-phase equipment, including motors and transformers. If the sequence is incorrect (CBA), equipment like motors may rotate in the reverse direction or cause operational issues.

The three-phase sequence test using bulbs is a simple method to verify the phase order. Three bulbs are connected between each pair of phases (AB, BC, and CA). When the system is powered, the bulbs will light up in a particular sequence. The correct phase sequence results in a smooth or progressive brightness pattern in the bulbs, whereas an incorrect sequence may cause uneven lighting or flashing of the bulbs. This method is a straightforward way to test the phase order without using specialized equipment.

Required Apparatus:

1. Bulb
2. Inductor / Capacitor
3. Connecting Wire

Experiment Diagram:

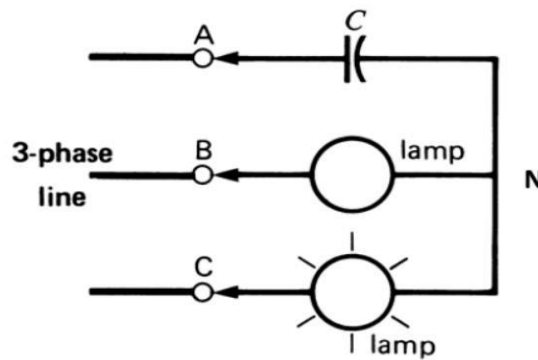


Fig 1: Phase Sequence experiment by Bulb and Capacitor

Result:

After performing the three-phase sequence test using bulbs, the bulbs lit up in a progressive pattern, indicating a correct ABC phase sequence. No irregular flickering or uneven brightness was observed, confirming the correct phase order.

Discussion:

1. I learned how to use a simple bulb method to check the phase sequence in a three-phase system.
2. I learnt to take measure without getting a major shock from AC circuit.

References:

1. Alexander, Charles K. Sadiku, Matthew N.O. *Fundamentals of electric circuits*. 7th ed New York: McGraw-Hill, 2020.
2. *Wikipedia.com*