Heaven's Light is Our Guide

Rajshahi University of Engineering & Technology

Department of Electrical & Computer Engineering

Lab report

Course Code : **ECE 1201**

Course Title : **Circuits and Systems-II Sessional**

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Submitted To:	**Submitted By:**
Oyshi Jyoti **Lecturer,** **Department of ECE, RUET**	**Name** : **Abid Aziz** **Roll** : **2210019** **Registration** : **1073** **Session** : **2022-2023** **Department of ECE, RUET**

Lab Report

Exp-Name:

Study the relationship between phase and line voltages of the connected 3-phase balanced system.

Objective:

The objective of this experiment is to study the relationship between phase and line voltages in a balanced three-phase system.

Theory:

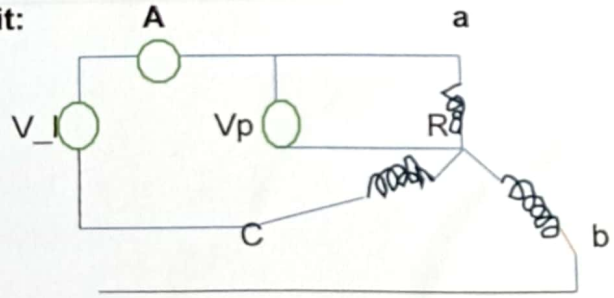
In a balanced three-phase system, the relationship between the line voltage (V_L) and the phase voltage (V_P) is given by:

$V_P = V_L / \sqrt{3}$

Similarly, the line current (I_L) is equal to the phase current (I_P):

$I_P = I_L$

Circuit:



Required Apparatus:

1. Source
2. Ammeters
3. Resistors

4. Multimeter

5. Connecting wires

Lab Report

Discussion:

In a three-phase balanced system, the phase voltages are equal in magnitude and are separated b 120 degrees. The line voltage is the voltage measured between any two lines, while the phase voltag is the voltage measured between any line and the neutral point. This experiment aims to validate t theoretical relationship between these voltages and currents in a star-connected system.

Result:

Sl	V_L (V)	V_P (measured) (V)	V_P (calculated) (V)	% Error	I_P (A)	I_L (A)
1	44.1	25.46	24.22	4.9%	19.25	19.25
2	37.15	21.94	20.45	4.61%	13.5	13.5
3	58.00	33.48	29.50	5.88%	10	10
4	22.73	12.26	13.12	6.58%	4.25	7.25
5	41.6	22.88	24.02	4.97%	16.75	16.75