

ETME 4130 Applied Electric Power and Machinery Lab 2: Transformers

Pre-Lab Analysis:

Find the readings of the two voltmeters and the two ammeters in the figure below (show all your work).

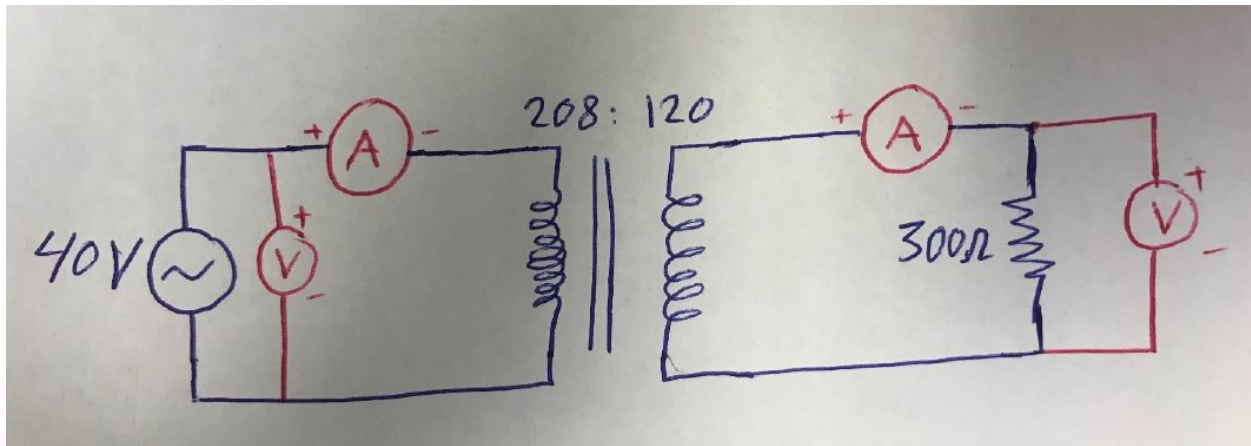
Calculations:

Voltmeter 1 (Primary side): _____

Voltmeter 2 (Secondary side): _____

Ammeter 1 (Primary Side): _____

Ammeter 2 (Secondary side): _____



Lab Work:

- Make sure that you wear your safety glasses continuously in the lab
- Make sure that the power is turned off before you start connecting the circuit
- Connect the circuit shown in the figure. Do NOT turn on the power until the professor approves your circuit. A video of the experiment can be found on YouTube at: <https://www.youtube.com/watch?v=D6tZ3A2FDrE>
- Record the readings of the two voltmeters and ammeters.

Readings:

Voltmeter 1 (Primary side): _____

Voltmeter 2 (Secondary side): _____

Ammeter 1 (Primary Side): _____

Ammeter 2 (Secondary side): _____

Post-Lab Analysis:

1. In few sentences, write about transformers (applications, components, types ..etc as you desire)?

2. Choose the correct answer from below:

Transformers can be used to:

- a. Step up/down AC voltage only
- b. Step up/down DC voltage only
- c. Step up/down both AC and DC voltages

3. Compare your lab measurements to the calculated values in the Pre-Lab analysis. If there is a difference between your readings and your calculations, what could be the reason for that difference?

4. If the input voltage was accidentally changed to a DC voltage of 40 volts, a few minutes later, a student takes the measurements. What do you expect the readings of each of the voltmeters and ammeters will be?

5. In one paragraph, describe what you did in the lab. You can add pictures if desired.