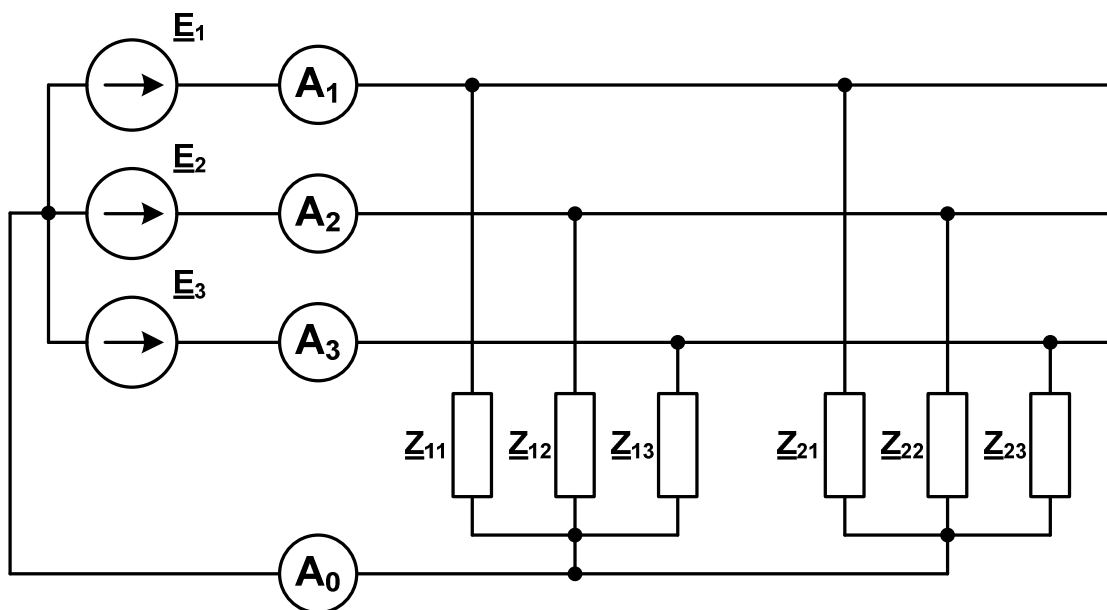


Module name: **Electrical Circuits 2**
Module ID: **IS-FEE-10085S**
Module type: **Workshop**
Semester: **summer 2023/2024**
Instructor: **Jarosław Forenc, j.forenc@pb.edu.pl**

Workshop 5 (21.05.2024)

1. A three-phase generator with a voltage of $E_{ph} = 230$ V supplies two unbalanced Y-connected loads. Simulate the circuit using PSpice and observe the waveforms of the line currents. Using the PSpice program, determine the values of the ammeter readings. Assume the following parameters: frequency $f = 50$ Hz, $\underline{Z}_{11} = (25+j10) \Omega$, $\underline{Z}_{12} = (10-j20) \Omega$, $\underline{Z}_{13} = (15-j10) \Omega$, $\underline{Z}_{21} = (20-j10) \Omega$, $\underline{Z}_{22} = (10+j15) \Omega$, $\underline{Z}_{23} = (15+j15) \Omega$.

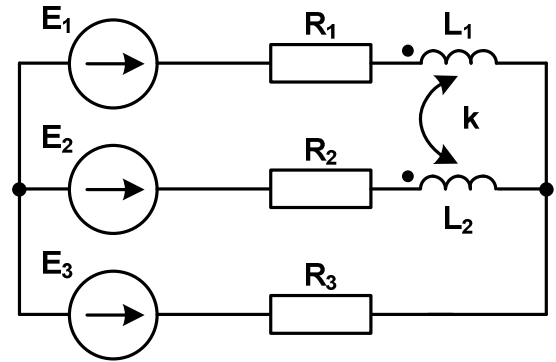


The report should include:

- calculations of ammeter readings,
- values of the elements used and the electrical circuit diagram (from PSpice),
- waveforms of line currents (for one period),
- values of line currents read in the PSpice program,
- conclusions.

Note: To copy waveforms, use: *Window* → *Copy to Clipboard* (ensure the „change white to black” option is selected)

2. The electric circuit shows a 3-phase, unbalanced Y-Y system. Simulate the circuit using PSpice and observe the waveforms of the line currents. Assume the following parameters: frequency $f = 50$ Hz, $E_{ph} = 230$ V, $R_1 = R_2 = R_3 = 50 \Omega$, $X_{L1} = X_{L2} = 20 \Omega$, $k = 0.5$.



The report should include:

- calculations of the line currents,
- values of the element used and the electrical circuit diagrams (from PSpice),
- waveforms of the line currents (for one period),
- values of the line currents read in the PSpice program,
- conclusions.

21.05.2024

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