Delta Configurations (38:31)

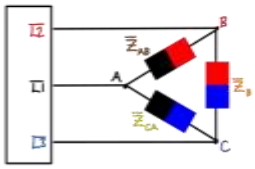
Given a 3 phase AC system with 120V line to neutral differentials phase shifted from each other by a relative 120°, determine the line to line differentials assuming L1 to neutral is the reference. Draw this on a phasor diagram. Determine the same phasor equivalents when L1-L2 is assumed to be the reference. Draw this on a phasor diagram.

Draw a delta configured load. Identify which voltage loads in a delta configuration experience.

Identify how current flows through the lines and loads in a delta configuration. Draw a diagram.

Summarize the electrical characteristics of delta configured loads.

Given this balanced delta configured load determine the voltage, current, and power for each load, line current, and total power.



$\overline{Z}_{AB} = 400\Omega\angle 20°$

$\overline{Z}_{BC} = 400\Omega\angle 20°$

$\overline{Z}_{CA} = 400\Omega\angle 20°$

REF: $\overline{V}_{AB} = 208V\angle 0° = \overline{V}_{AB}$

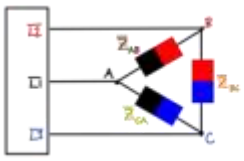
$\overline{V}_{BC} = 208V\angle -120° = \overline{V}_{BC}$

$\overline{V}_{CA} = 208V\angle 120° = \overline{V}_{CA}$

Identify a short cut method of determining electrical properties for individual loads and total power in a balanced delta configuration.

Identify a short cut method of determining line current given known load current in a balanced delta configuration.

Given this unbalanced delta configured load determine the voltage, current, and power for each load, line current, and total power.



$\overline{Z}_{AB} = 500\Omega\angle 50°$

$\overline{Z}_{BC} = 400\Omega\angle 20°$

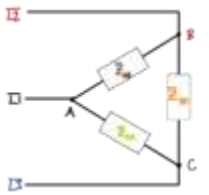
$\overline{Z}_{CA} = 400\Omega\angle 20°$

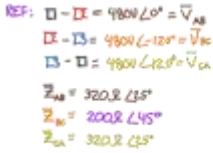
REF: $\overline{V}_{AB} = 208V\angle 0° = \overline{V}_{AB}$

$\overline{V}_{BC} = 208V\angle -120° = \overline{V}_{BC}$

$\overline{V}_{CA} = 208V\angle 120° = \overline{V}_{CA}$

Given this balanced delta configured load determine the voltage, current, and power for each load, line current, and total power.





Given this unbalanced delta configured load determine the voltage, current, and power for each load, line current, and total power.