

# Ideal Transformer

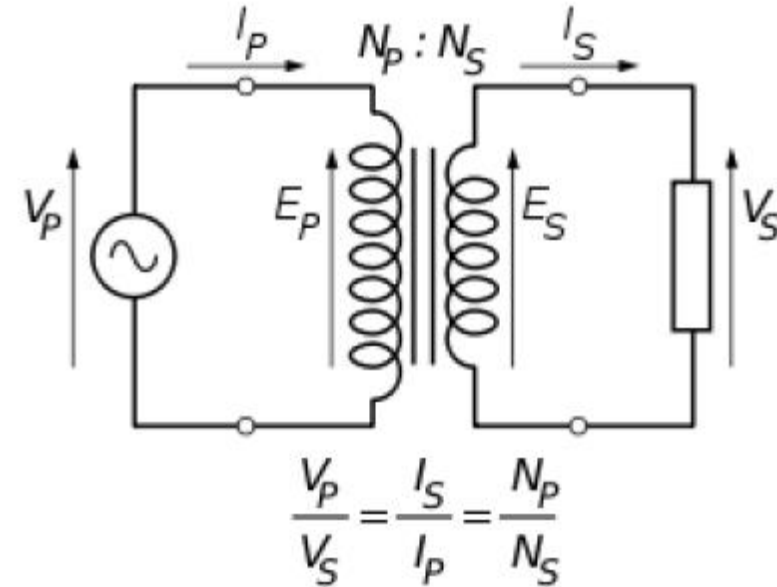
NCEES® FE Reference Handbook Version 10.2 Page 366 - 367



STUDY FOR FE

Ideal transformer has following characteristics:

- Core has no hysteresis or eddy currents.
- Magnetizing curve is vertical with no saturation
- Leakage flux in the core is 0.
- Winding resistance is 0.



$$P_{in} = V_p I_p \cos \theta_p \quad \theta_p = \theta_s = \theta \quad P_{out} = V_s I_s \cos \theta$$

$$S_{in} = V_p I_p \quad S_{out} = V_s I_s \quad S_{in} = S_{out}$$

$$Z_p = a^2 Z_s$$