

Alternating Current

Active, Reactive and Apparent Power

Applied Mechatronics

Module 5.1.2

by Wolfgang Neff

AC Loads

- Ohmic Loads
 - Chapter 6.10: Wechselstromverbraucher
- Inductive Loads
 - Chapter 6.13: Induktiver Blindwiderstand, ...
- Capacitive Loads
 - Chapter 6.14: Kondensator an Wechselspannung

AC Power (1)

- Active Power
 - Chapter 6.12: Wirkwiderstände, Wirkleistung
- Apparent Power
 - Chapter 6.15: Scheinleistung, Leistungsfaktor
- Reactive Power Compensation
 - Chapter 6.16: Blindleistungskompensation

AC Power (2)

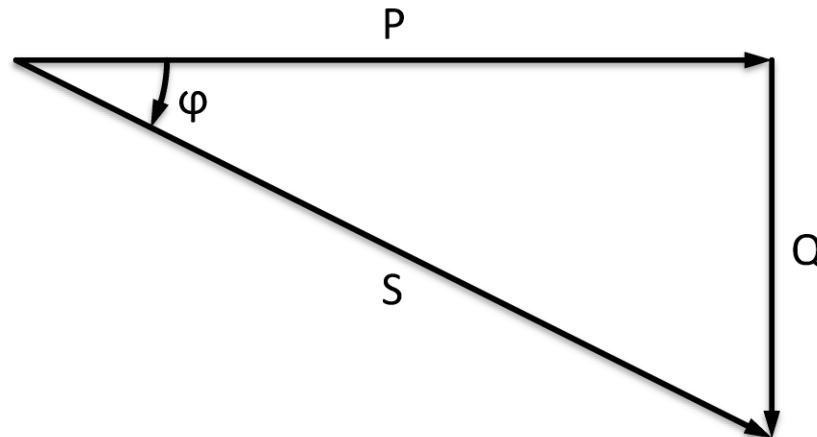
- Mathematics
 - Chapter 6.1: Rechtwinkliges Dreieck

Addendum (1)

- Fundamental Terms
 - R: electrical resistance
 - X: electrical reactance
 - Z: electrical impedance
 - φ : phase angle
 - $\cos \varphi$: power factor

Addendum (2)

- The Power Triangle
 - P: active, effective or real power
 - Q: reactive or idle power
 - S: apparent power



Bibliography

- SEYR, SIGURD and SCHWAIGER, HERBERT, 2014, Elektrotechnik Grundlagen mit angewandter Mathematik. Wien : Jugend & Volk. ISBN 978-3-7100-2873-1.