

ELECTRONICS AND COMMUNICATION TECHNOLOGIES: ELECTRONICS SYSTEMS

LM Cyber Security – Fall 2024

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Dip. Ing. Informazione

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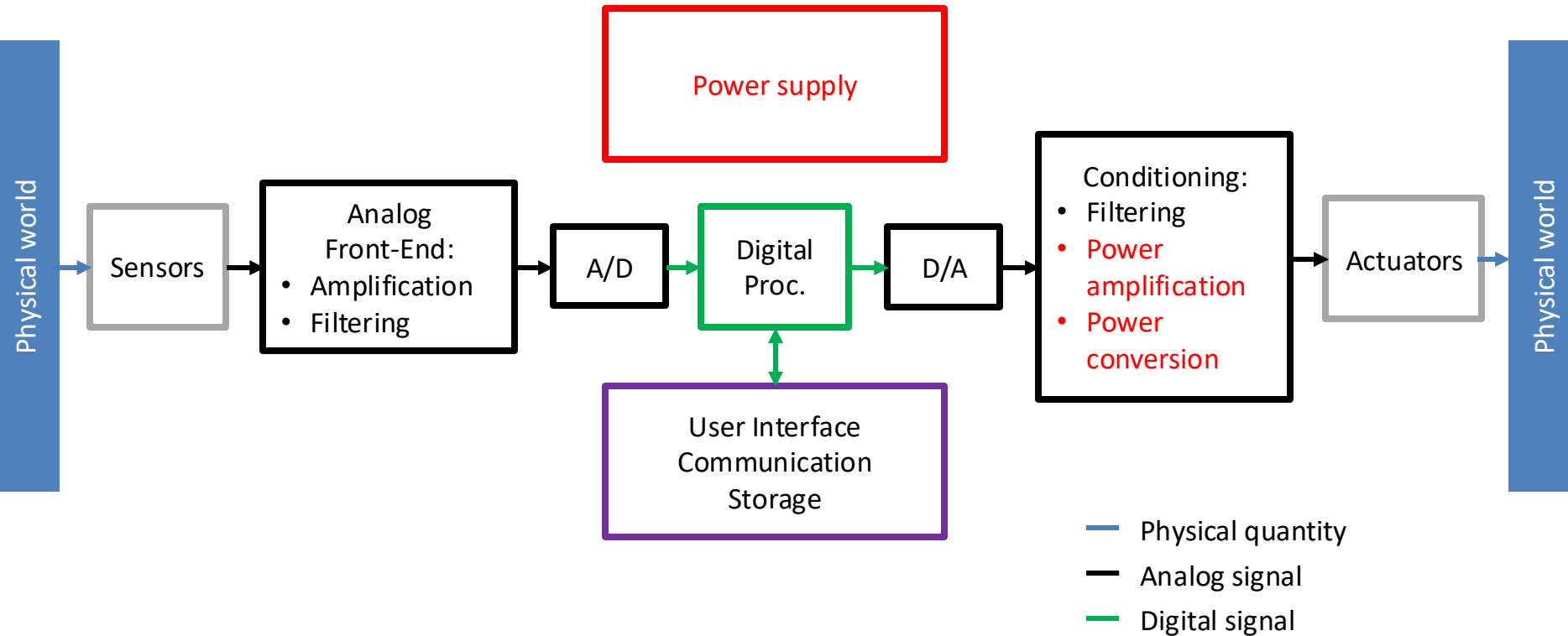
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Office hours:

Friday 14-16. Please, contact me in advance before showing up.
We can also arrange an appointment remotely on Microsoft Teams.

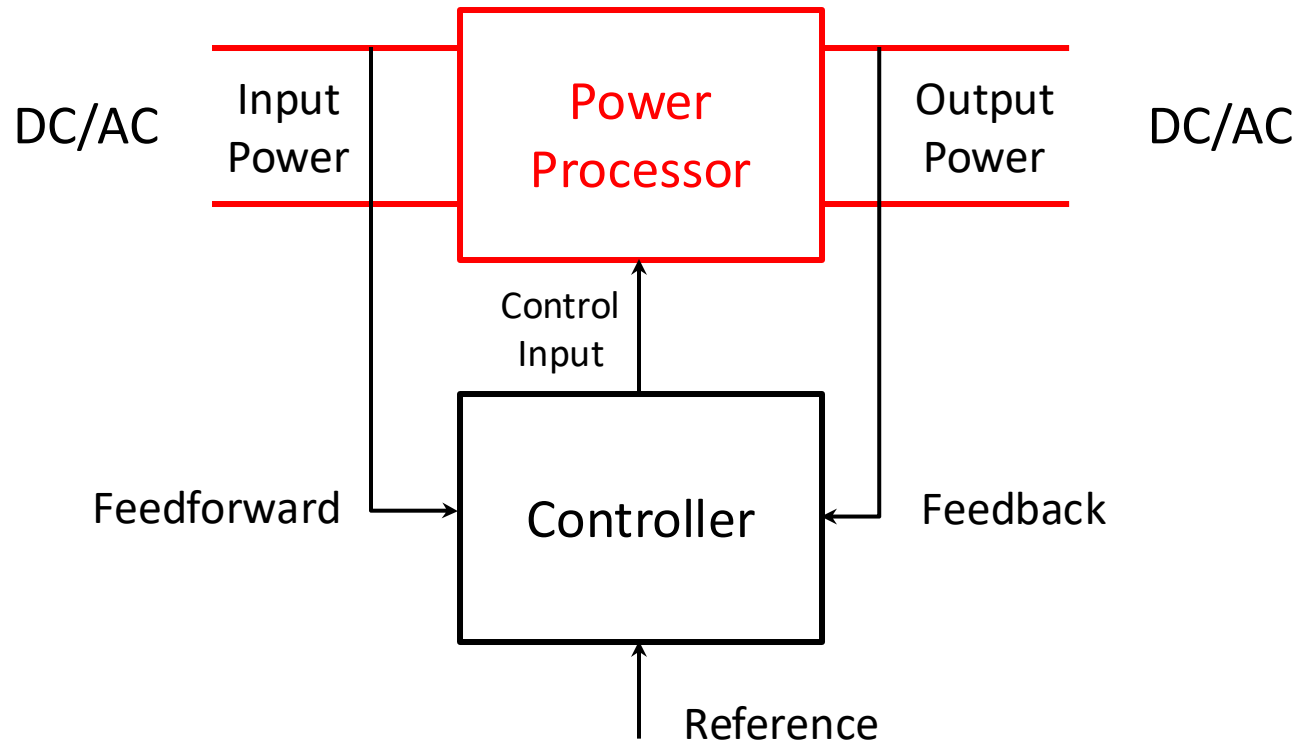


Electronic Processing System



A/D: Analog to Digital converter
D/A: Digital to Analog converter

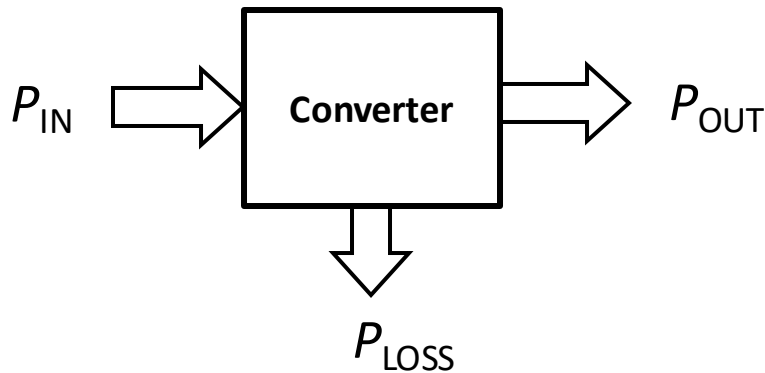
Power Converter



Classificazione convertitori di potenza

Typology	Input	Output	Characteristics
DC-DC	DC	DC	<ul style="list-style-type: none">• Different voltage• Regulation• Galvanic insulation
Inverter	DC	AC	
Rectifier	AC	DC	
Cycloconverter	AC	AC	<ul style="list-style-type: none">• Different frequency and amplitude

Efficiency



$$\eta = \frac{P_{OUT}}{P_{IN}}$$

$$P_{LOSS} = P_{IN} - P_{OUT} = P_{OUT} \left(\frac{1}{\eta} - 1 \right)$$

- Why we aim at having efficiency as close as possible to 1?
 1. Simplification of the cooling system in terms of size and weight and costs
 2. Higher reliability
 3. Energy saving