

task_5ztn80yw2uibcsxr_with_calculation

Student Group

First Name	Surname	Matrikel Nr.

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Exercise E1 Conversions: Battery

2. How many minutes could a battery with 10 kWh of energy supplied by a 100 W power source provide the energy for the calculation?

Result:

$$t = 200'000 \text{ min}$$

There are additional losses:

$$W = 10 \text{ kWh} = 10'000 \text{ Wh} \quad t = \frac{W}{P} = \frac{10'000 \text{ Wh}}{100 \text{ W}} = 100 \text{ h} = 6'000 \text{ min}$$

• The battery has an internal resistance. Depending on the current the battery provides, this leads to internal losses.

- The internal resistance of the battery depends on the state of charge (SoC) of the battery.
- The wires also add additional losses to the system.

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Last update: **2024/10/02 17:46**

