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## 1801 leXsolar-Emobility Professional

Order code: **5501.1801**



Cena bez DPH

2.561,00 Eur

Price with VAT

3.098,81 Eur

Parameters

Subject

Energy storage technology

Quantitative unit

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For storing electrical energy many different battery technologies are already on the market. But what application needs which battery type, what capacity does the battery need to have and what loading performance is the best to guarantee a long durability? Due to the problem

of storing renewable energy, these are questions which need to be worked on in technical training. With leXsolar-EStore Professional, the characteristics of different battery types can be analyzed. In addition, the kit helps students to find out more about the different fields of application. The kit comes with different battery technologies such as lead, NiMH or Lithium-Polymer(LiPo) as well as a PEM-fuel cell. For the correct determination of the internal resistance four-terminal sensing is possible. With the integrated ChargerModule batteries are always ready to use and battery charging methods can be addressed in experiments.

## Experiments:



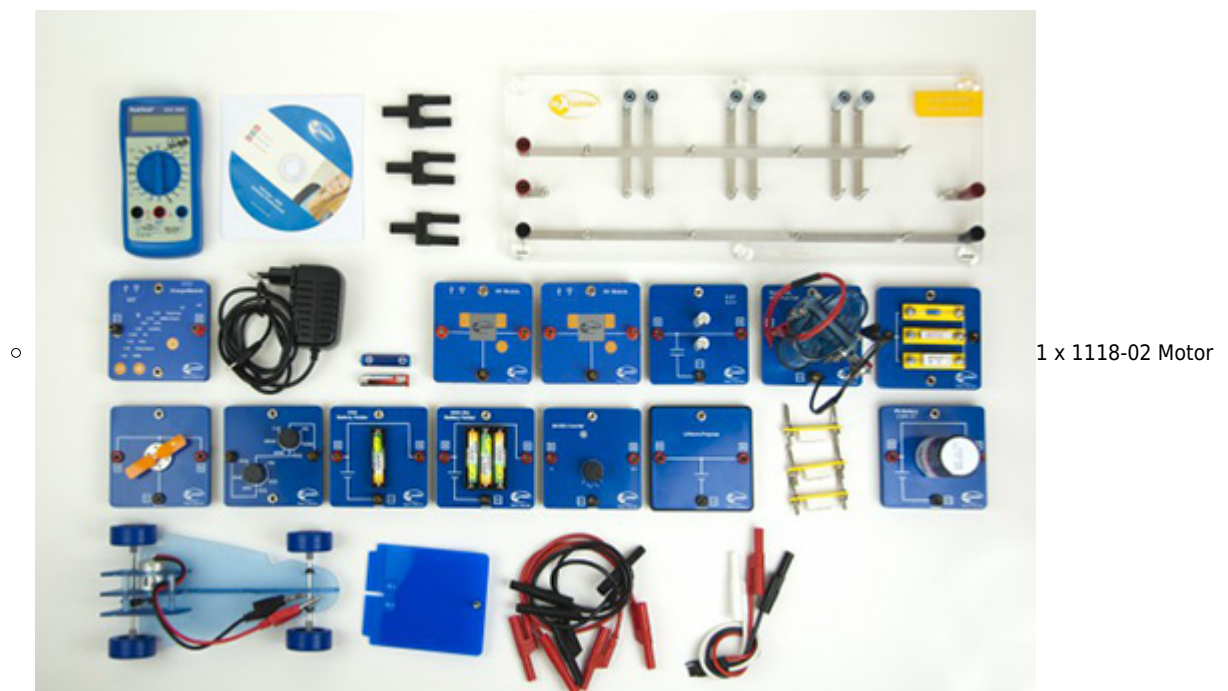
Setup of a simple

circuit

- Ohm's law
- Series connection of ohmic resistances
- Parallel connection of ohmic resistances
- Start-up and idling behavior of a motor
- Nominal voltage and capacity of voltage sources
- Four-terminal sensing
- Internal resistance of voltage sources
- Series connection of voltage sources
- The capacitance of a battery module
- The energy density of battery modules
- The Ri efficiency of a battery module
- The total efficiency of a battery module
- Temperature-dependent behavior of the lithium-polymer cell
- The charging process of a capacitor
- The discharge process of a capacitor
- I-V characteristics of the single NiMH battery module

- I-V characteristics of the NiZn battery module
- I-V characteristics of the LiFePo battery module
- I-V characteristics of the lead battery module
- I-V characteristics of the lithium-polymer battery module
- I-V characteristics of the triple NiMH battery module
- The charging process of the NiMH battery
- The charging process of the NiZn battery
- The charging process of the LiFePo battery
- The charging process of the lead battery
- The charging process of the lithium-polymer battery
- The discharging process of a battery module
- Hydrogen production in the reversible hydrogen fuel cell
- Characteristic curve of the electrolyzer
- Hydrogen consumption of a fuel cell
- Characteristic curve of the fuel cell
- The efficiency of the hydrogen fuel cell
- Operation of the electric car with several battery modules
- Operation of the electric car with the reversible fuel cell

### List of components:



- module Pro
- 1 x 1118-09 Battery module NiMH 3xAAA Pro
- 1 x 1118-11 Capacitor module Pro
- 1 x 1400-13 leXsolar-base unit Professional
- 1 x 1800-01 Resistor module (triple) Pro
- 1 x 1800-03 Resistor plug element 1 Ohm
- 1 x 1800-04 Resistor plug element 100 Ohm
- 3 x 1800-05 Resistor plug element 10 Ohm
- 1 x 1800-06 Resistor plug element 33 Ohm
- 1 x 1800-07 Lithium-polymer (LiPo)-battery module
- 1 x 1800-08 Battery module holder 1xAAA Pro
- 1 x 1800-09 Battery adapter cable
- 1 x 1800-12 Fuel cell holder Pro
- 1 x 1800-13 Lead (Pb) -battery module Pro
- 1 x 1801-02 Electric model car
- 1 x 1801-06 LiFePo-battery AAA
- 1 x 9100-13 ChargerModule
- 1 x 9100-03 AV-Modul

1 x 1118-02 Motor

- 1 x 1100-62 Potentiometermodul 110 Ohm Pro
- 1 x L2-02-017 Propeller
- 1 x L2-04-059 Safety test lead, 50cm, red
- 1 x L2-04-060 Safety test lead, 50cm, black
- 1 x L2-04-066 Safety test lead, 25cm, red
- 1 x L2-04-067 Safety test lead, 25cm, black
- 1 x L2-04-102 NiZn-battery AAA
- 3 x L2-05-068 Safety short-circuit plug, with mid socket
- 1 x L2-06-011 Digital multimeter
- 1 x L2-06-067 Reversible Fuel cell
- 1 x L3-01-072 Aluminium case Estore-Professional
- 1 x L3-01-092 Insert EMobility Professional 1801
- 1 x L3-03-081 leXsolar-DVD Professional
- 1 x L2-04-021 NiMH battery AAA
- 1 x L3-03-165 Einräumplan 1801 EMobility Professional