

Item No.: CO4204-4D

## Course - Electrical engineering 1: DC technology

### Includes:

- 1 Experiment card with various resistor circuits, capacitor and coil
- 1 Experiment card with voltage divider circuits
- 1 Experiment card with circuits for studying temperature, light and voltage-dependent resistors
- CD-ROM with Labsoft and course software

### Course contents:

- Familiarisation with the term electricity
- Examples of the use of electricity
- Introduction to the Bohr model of the atom
- Electric charge and electric fields
- Differences between conductors, insulators and semiconductors
- Familiarisation with the terms current, voltage and resistance
- Investigation of a simple electrical circuit with a lamp
- Different types of DC sources
- Measurement using voltmeters and ammeters
- Colour coding and design of resistors
- Experimental verification of Ohm's law
- Experimental verification of Kirchhoff's laws
- Measurements on resistances in series and parallel
- Investigation of circuits with resistors in mixed series and parallel connection
- Measurements on voltage divider circuits with fixed/variable resistors
- Measurements on bridge circuits
- Power measurements in DC circuits
- Investigation of the in-circuit response of variable resistors (LDRs (photocells), NTC and PTC thermistors, VDRs)
- Measurement and interpretation of variable resistor characteristics (LDR, NTC, PTC, VDR)
- Measurements on coils and capacitors in a DC circuit
- Fault simulation (9 simulated faults activated by relay)
- Course duration 8 h approx. (fault finding 1.5 h approx.)

