

Item No.: SO4204-5H

## Course - Electronics 3: Transistor and amplifier technology

### Includes:

- 1 Experiment card with 2 multi-stage amplifier circuits with modifiable feedback
- 1 Experiment card with differential amplifier built with discrete components
- 1 Experiment card with 2 constant current sources (FET and bipolar transistors)
- CD-ROM with Labsoft browser and course software

### Course contents:

- Become familiar with sample applications for transistors as amplifiers
- Be able to explain characteristics fields and parameters of transistors
- Use data sheets for determining transistor properties
- DC biasing and operating point adjustment of transistor amplifiers
- Properties of transistor amplifiers in emitter and collector circuits
- Darlington circuit
- Become familiar with amplifier classes: Class A, B, C and D
- Be able to explain the principle of push-pull amplifiers
- Small signal response with equivalent circuit diagrams of amplifier circuits
- Measuring voltage gain of an amplifier stage
- Analysis by measurement of a multi-staged amplifier (gain and frequency response) with resistive, capacitive and direct feedback
- Carry out measurement series on the influence of various feedback loops (R, RC) on gain
- Introduction to the function and operation of differential amplifiers
- Differential and common mode operating differential amplifiers
- Carry out offset adjustment and operating point adjustment of a differential amplifier
- Control of a differential amplifier with symmetrical and asymmetrical voltages



- Investigating the response to load of a constant current source using FETs or bipolar transistors
- Introduction to the functioning of a constant current source
- Fault simulation (Faults activated via relay)
- Course duration 8 h approx.