



All experiments described in this handbook can be performed with the "COBRA-Interface" which has following specific features:

The versatile high performance computer interface basic unit can be extended by means of a series of supplementary modules.

- Intelligent, microprocessor controlled interface for the performance of measurements and experiments in physics, chemistry, biology and technology
- Can be connected directly to any modern computer over the standard serial interface (RS 232) without supplementary cards and without opening the computer housing
- Replaces devices such as 4-channel plotters, xyt-plotters, transient plotters, digital counters, temperature, conductivity, pH, pressure measuring devices, etc.
- No load on the computer power supply due to the interface, thus excluding computer failures due to partial power supply overloads
- High performance, adjustable direct voltage output to provide power for experiments and for programmable power outputs
- Continuous extension of the series of modules and of the software library keeps on providing new applications for the COBRA user

This handbook specially covers experiments in the fields of physics, chemistry and biology with the COBRA interface which may be performed without any COBRA module.

This HANDBOOK can be purchased separately. It contains the experiments listed below. Please ask for a complete equipment list. Ref No 26101

Handbook • Science with COBRA • No. 01220.22 • 33 described Experiments

1 PHYSICS WITH COBRA

- CWA 1.1 (12800)**
COBRA as precision chronometer
- CWA 1.2 (12801)**
Function principle of a thermocouple
- CWA 1.3 (12802)**
Change of states of aggregation – Temperature dependent behaviour of bodies when they are heated or cooled
- CWA 1.4 (12803)**
Specific thermal capacity of substances.
- CWA 1.5 (12804)**
Investigation of the characteristic oscillations of air columns

- CWA 1.6 (12805)**
Investigation of frequency of a tuning fork, detuning of a tuning fork
- CWA 1.7 (12806)**
Analysis of sounds and speech
- CWA 1.8 (12807)**
Ohm's law.
- CWA 1.9 (12808)**
Temperature dependence of the resistance of pure metals
- CWA 1.10 (12809)**
Characteristic lines of semiconductor diodes
- CWA 1.11 (12810)**
Measurement of the work and power of a filament light bulb
- CWA 1.12 (12811)**
Switch contact bouncing

- CWA 1.13 (12812)**
Start up current of a light bulb
- CWA 1.14 (12813)**
Start up behaviour of a capacitor
- CWA 1.15 (12814)**
Start up behaviour of an induction coil
- CWA 1.16 (12815)**
Free damped oscillation
- CWA 1.17 (12816)**
Regulation of the filling level of a tank

- CWA 2.2 (12821)**
pH value of aqueous acid and alkaline solutions
- CWA 2.3 (12822)**
Neutralisation of an acid with a base (titration)
- CWA 2.4 (12823)**
Galvanic series of metals
- CWA 2.5 (12824)**
Electric conductivity of acids and bases
- CWA 2.6 (12825)**
Electric conductivity of solid salts, molten salts and aqueous salt solutions
- CWA 2.7 (12826)**
Electrolysis of a copper sulphate solution
- CWA 2.8 (12827)**
Electrolysis of hydrochloric acid solutions

2 CHEMISTRY WITH COBRA

- CWA 2.1 (12820)**
Melting and crystallization diagram of a pure substance

**3 BIOLOGY WITH
COBRA**

CWA 3.1 (12840)

Thermal loss depending on body covering, body surface and body volume

CWA 3.2 (12841)

Photometry and photosynthesis rate

CWA 3.3 (12842)

Ecology: pH value of water

CWA 3.4 (12843)

Ecology: conductivity of water

CWA 3.5 (12844)

Heart and blood vessel sound ranging (phonocardiography)

CWA 3.6 (12845)

Change of blood circulation caused by smoking: measurement of skin temperature

CWA 3.7 (12846)

Measurement of fermentation

CWA 3.8 (12403)

Enzyme activity as a function of temperature



Investigation of frequency of a tuning fork, detuning of a tuning fork (CWA 1.6)