High Pressure System

- Turnkey sample environment for dielectric and conductivity measurements at elevated pressures and temperatures, including 19" mounting rack.
- Pressure range: 0 to 300 MPa (0 to 3 kbar).
- Temperature range: from ambient to 250 °C.
- Supported by Novocontrol DETACHEM control software via IEEE488 (GPIB) interface
- Fully supported by Novocontrol impedance analyzers Alpha, Beta, and Alpha-A (with test interfaces ZG2, ZG4, POT/GAL 30 V 2A, POT/GAL 15 V 10 A).

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High Pressure System

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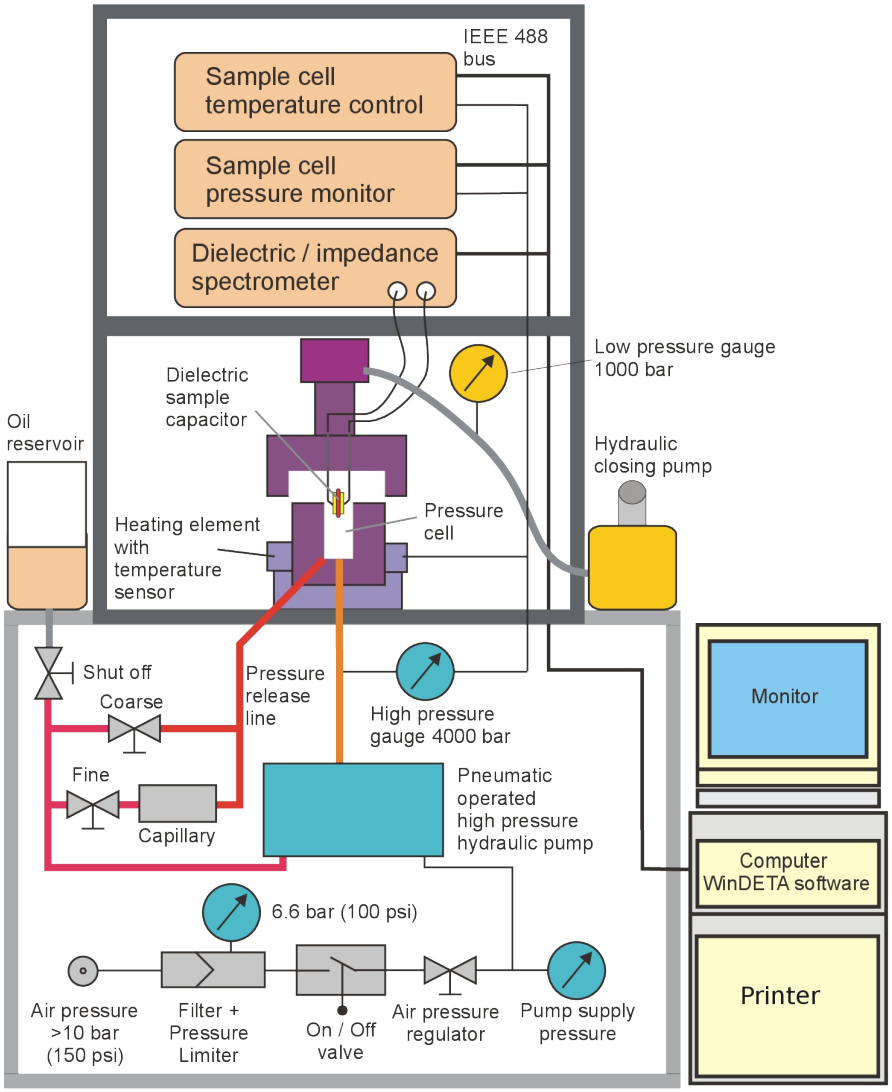
NOVOCONTROL High Pressure System

High Pressure System

The Novocontrol High Pressure System is a high quality turn key high-pressure control system for applications in materials research. The system has been developed to set or change pressure and temperature of the sample under test with high accuracy and reproducibility. The system is modular and may be combined with any Novocontrol dielectric or impedance analyzer.
The High Pressure System is designed to provide easy, safe and nearly fully automatic operation (pressure settings are, however, done manually).

Applications

- Permittivity and conductivity measurements of materials as a function of pressure and temperature
- Investigations on activation volumes
- Pressure dependence of relaxation phenomena in various polymer systems
- Investigation of side-chain crystallisations
- Pressure effect on molecular motions (segmental modes, normal modes) in polymeric systems



Overview of a high-pressure turnkey system, consisting of high-pressure part, dielectric analyzer, and computer control.
Exact appearance subject to change.

Features

- Pressure range from 0 to 300 MPa (manual control)
- Temperature range from ambient to 250 °C (set by computer or controller front panel)
- Pressure range: 0 to 300 MPa
- Includes pressure sample cell, sample cell pressure monitor, pneumatically operated high pressure hydraulic pump, pneumatically operated hydraulic cell closing pump, several pressure gauges, valves and capillaries
- Includes four heating elements with integrated thermocouple as well as sample temperature Pt100 sensor
- Precision temperature controller (Novotherm-HP) with integrated pressure display
- Fast and highly reliable stabilisation, little overshoot.
- Temperature resolution: 0.1°C
- Sample diameter up to 20 mm
- Sample thickness up to 5 mm
- System interface: GPIB/ IEEE488
- Turnkey system, 19" rack

System requirements

- Novocontrol impedance analyzer Alpha, Beta, or Alpha-A (with recommended test interface ZG2 or ZG4).
- Compressed air supply (min. pressure 6.5 bar, effective delivery volume about 200 l/ min)
- DETACHEM software package

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