



# ATLAS –SOLLICH

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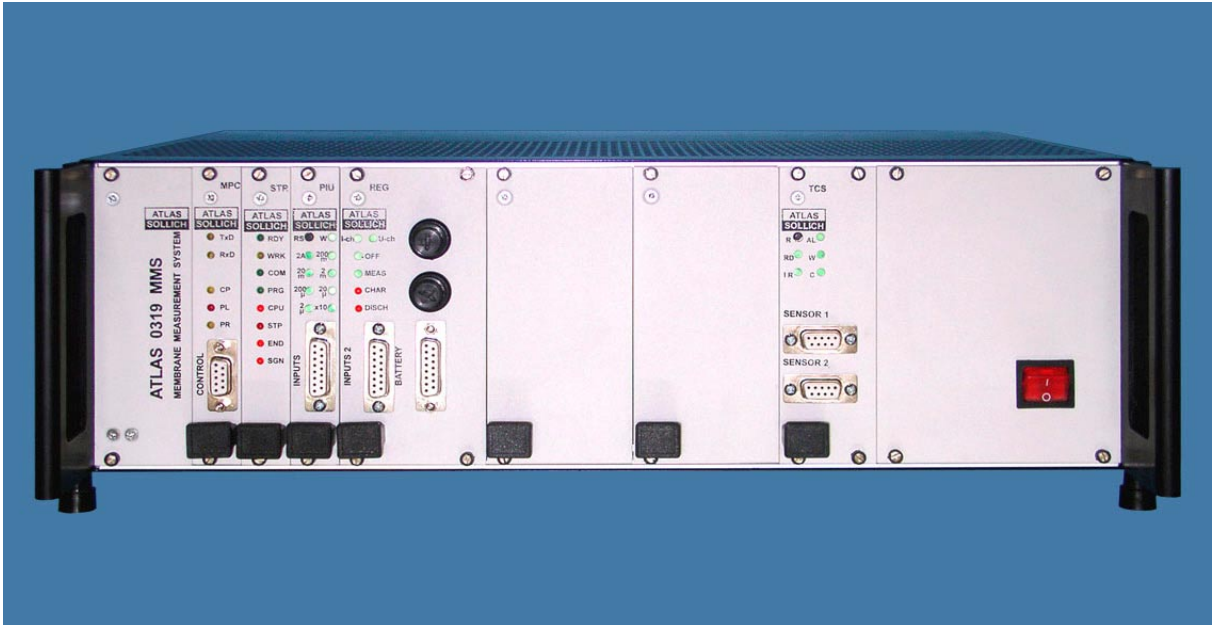
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## TECHNICAL INFORMATION

# ATLAS 0361

## BATTERY AND SEPARATOR MEASUREMENT SYSTEM



GDAŃSK 2005

**ATLAS 0461 BATTERY AND SEPARATOR MEASUREMENT SYSTEM** is complete measuring device designed to testing and measurements diaphragm parameters, battery separators and single battery cells.

Device is consisted of:

- the packet of controller responsible for driving, controlling and regulation of adjustments,
- the packet controlling the parameters of voltage and current cell and independent measurement of differential potential between cell measurement electrodes,
- the packet ensures the suitable current forcing of cell,
- programmable temperature regulator installed optionally in the system, ensuring programming changes of measure cell temperature, used to measure the tested material for specified temperatures,
- the measuring adapter allowing to easy connection of measure cell to device connectors.

### DEVICE APPLICATION

- Forcing the constant current with positive or negative polarization between the current device connectors with simultaneous limiting voltage value,
- Measurement of differential potential between reference electrodes with or without separator
- Computation of the electrical resistance of separator with use performed measurements,
- The possibility of forcing any sequence of currents ( pulses of current ) with positive (charging) or negative (discharging) polarization and measurement of SEM, and computation of the electrical resistance,
- Temperature measurement of cell,
- Measurement of external sensor voltage (e.g. pH, pressure, wetness),
- The possibility of finishing any executed charging or discharging process depended on: the time of service, cell differential potential, current value, temperature, external voltage value from any sensor, combination of above conditions,
- Reading the results during performing of research program,
- Optical and acoustic signaling the state of device.

Examples of connecting tested object to ATLAS 0361 BSMS device.

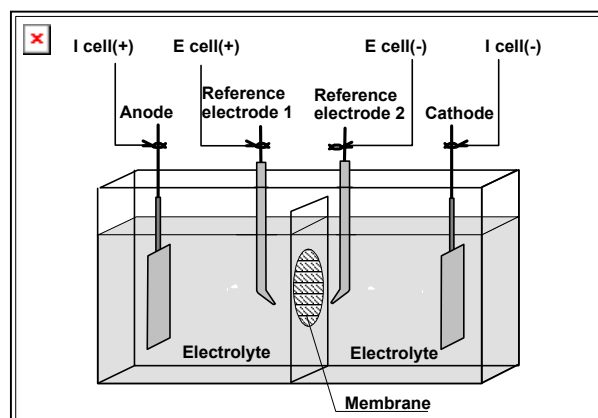


Fig. 1 Testing diaphragms and separators

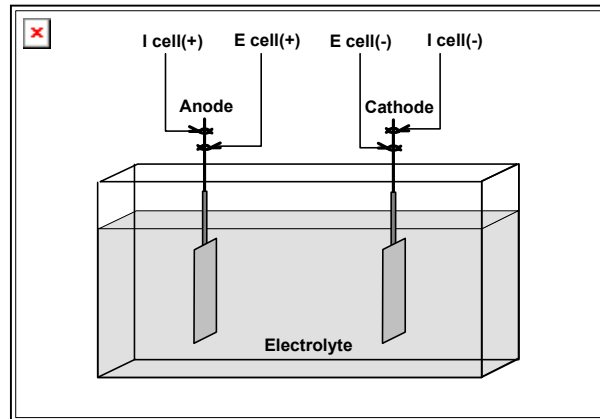


Fig. 2 Testing single cell

### TECHNICAL DATA

- Maximum cell current: 2A
- Maximum voltage on current cell connectors: +8V
- Minimum voltage on current cell connectors: -8V
- Programming and measurement of current value in subranges: 200uA, 2mA, 20mA, 200mA, 2A
- Measurement of cell potential value in subranges: 30mV, 300mV, 3V
- Measurement of separators resistance in range 0,001 ohm ÷ 10kohm
- Programmed and measured current and potential cell resolution: 12bits
- Programmed and measured current value error: < 1%
- Programmed and measured cell potential value error: < 0,5%
- Potential measurement inputs bias current < 100pA
- Power supply: 230V, 50 Hz
- Maximum power consumption: 80VA

### PROGRAM A-SMS

The ATLAS 0361 BSMS works with external computer used to programming it and receiving results of measurements. The service and cooperation of computer and device is realized by A-SMS (Atlas Separator Measurement System) program.

Device is connected to computer by serial interface RS232. During the execution of measuring process the computer can be switched off.

In the driving program the following processes of measurements, current flowing with specified polarization and with or without separator, are recorded as next steps. Program is executed from first to the last programmed step. The end of executing of each steps is depended on settings chosen by operator.

Selected fragment of program can be repeated many times by internal loop.

When program works the results of measurements are on up to date send to computer and displayed. The results from device can be displayed on the graph.

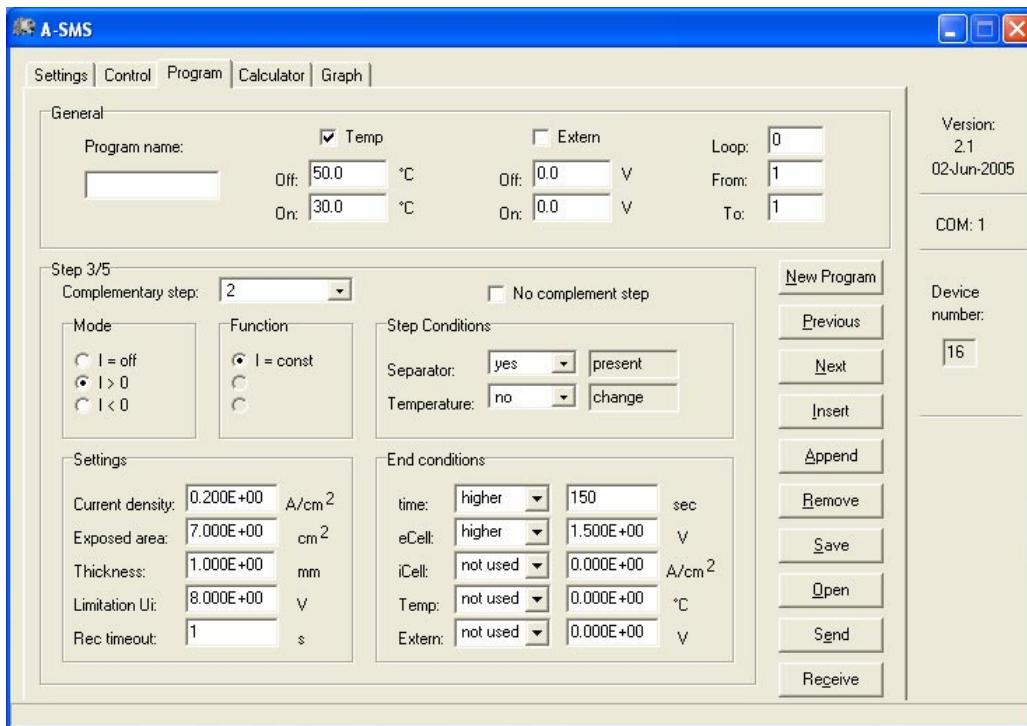


Fig. 3 Creating individual steps of program