

ION450 Ion Analyser

pH, Conductivity and ISE - all in one instrument

- *pH and conductivity measurements in the same beaker*
- *Graphical view of ISE calibrations*
- *Built-in sample stand with magnetic stirring*
- *Comprehensive GLP functions*
- *Quality Control and metrology services*
- *Automatic sequencing of 2 to 6 methods*



Automated pH, conductivity and ISE in one instrument saves time and space

The ION450 lets you select the type of measurement you need, linking calibrations and methods as you wish. Having a single instrument for simultaneous measurement and display of pH and conductivity makes analyses quick and simple.

Intelligent design ensures effortless set-up and maintenance

Electrodes slot securely in place in one easy movement thanks to our unique bayonet concept, ensuring reproducible mounting. For convenient maintenance, the instrument prompts you to check your electrodes.

Intuitive interface guides you through every step

Clear-text prompts in a choice of languages make routine work so much simpler. Graphical view of ISE calibrations and easy-to-review GLP archives mean you can always be sure of the quality of results.

Complete automation frees up your time

The ION450 comes complete with interfaces for sample changers, printers and PC so you can automate pH, conductivity and ion measurements in the same beaker - sample after sample.

Full traceability and control give you confidence in your results

Comprehensive GLP archives and the ability to add QC samples to your sample runs ensure you can count on your results. Optional Supervisor and User levels mean that methods are protected and set procedures systematically followed.

Internet resources mean expert assistance is always at hand

Free application notes and software updates are permanently available from our Internet Resource Centre. All you need to provide is the sample!

Technical Specifications

ION450

Potentiometric methods

pH electrode calibration: up to 5 points using IUPAC standards or 4-7-10 Series buffers with error recognition on buffer used.
Possibility to work with user-defined buffer values using the Free buffer mode.
pH with temperature-compensated reading: probe, entered or fixed at 25°C.
Direct pH/mV measurements with recording on stable reading.
Sequencing of up to 10 methods, including electrode calibrations.
Coupling of 2 to 6 methods in one beaker, including direct ISE and EC measurements.

Conductivity method (EC)

Direct conductivity measurements with recording on stable reading.
Conductivity with temperature-corrected display: none, natural water (ISO 7888), linear.
Conductivity cell cable resistance compensation.
Conductivity cell calibration: manual or automatic cell constant determination using free standards or 1, 0.1, 0.01 Demal KCl standards, NaCl 0.05% and 25 µS/cm @ 25°C low conductivity standard, 0.1, 0.01 and 0.001 M KCl standards.

Ion Selective Method (ISE)

Direct measurements with recording on stable reading.
Electrode calibration with up to 9 standard solutions.
Electrode calibration curves fitted using non-linear regression with C_{∞} detection limit determination according to IUPAC.
 $mV = f(pC)$ for ISE calibration curve plotting.

Measuring ranges Resolution

-9 to 23 pH	0.001 pH
±2000 mV	0.1 mV
4 µS, 40 µS, 400 µS,	1/4000
4 mS, 40 mS, 400 mS	of scale
-10°C to +100°C	0.1°C

Printout

Automatic. GLP compliant.
Selectable: no, 80 columns, continuous, page to page. 3 levels of detail.
Laser or dot matrix printer.

Results

QC check on results with visual warning.
Statistical calculations.

Units

All standard units for samples/results.
Conductivity: µS/cm or mS/cm.
Ion measurement: eq/l, meq/l, mol/l, mmol/l, g/l, mg/l, mg/ml, µg/ml, % (m/v) or ppm (m/v).

Storage capacity

Global password protection for programming access.
Non-volatile memory.
User programmable: 50 methods.
More than 30 electrodes pre-identified to help programming.
Storage of 200 results. Results storage can be disabled.
Stored parameters characterised by own ID, location and calibration data.
Embedded operating procedures for electrode exchange.
Automatic electrode and QC prompt.

Sample list

Up to 126 data with alphanumeric ID.
QC sample definition.

Electrode stand - stirring

Magnetic stirrer, 22 reproducible speeds (0 to 1100 rpm) in 50 rpm steps.
Propeller connection.
Beaker volume: 5 to 400 ml.

Inputs/outputs

2 indicator electrode inputs.
1 reference electrode input.
1 ground input for differential measurement.
1 imposed current input, ±1 mA ±1 µA.
1 temperature input.
2/4 pole conductivity cell input.
0-5 V and 0-12 V TTL output.
0-5 V TTL input.
Serial connections for printer/PC.
Serial connection for sample changer fitted with 10 to 126-position tray.
PS/2 port for PC keyboard and/or barcode reader.

Languages

English, German, Danish, French, Italian, Spanish, Swedish.

Casing

Fully splashproof KYDEX® T (PVC/acrylic).
Graphic 128x128 dot LCD and alphanumeric keypad.

Dimensions (H x W x D)

260 x 200 x 400 mm.



Weight

2.5 kg.

Power requirements

47.5 - 63 Hz 115/230 Vac +15 -18%.

Environmental conditions

5 to 40°C temperature.
20 to 80% relative humidity.

International standards

CE marking: complies with EMC directive 89/336/EEC, LV directive 73/23/EEC.

Ordering information

ION450 configurations

The ION450 Ion Analyser, Co is delivered ready for use including a combined pH electrode (Red Rod technology), a 4-pole conductivity cell and a full set of connecting cables, sample stand accessories, 4.005-7.000-10.012 IUPAC buffers, 0.1 and 0.01 Demal KCl conductivity standards and a GK•ANNEX Electrode Maintenance Kit.

The ION450 Ion Analyser, Ba includes a full set of connecting cables and sample stand accessories. Electrodes and standards need to be purchased separately.

Metrology

To comply with ISO 9001 and ISO 17025 requirements, our metrology department can supply calibration and verification certificates.

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