201NH3

ISE electrodes for ammonia (NH_3) measures

These electrodes are designed to measure ammonia (NH_3) in aqueous solutions in a wide range of concentrations.
The electrode includes an internal special pH sensor, a reference electrode and a permeable membrane selective to ammonia.
Electrode body is made of plastic material and is typically suitable for laboratory applications.

Advantages

- **Plastic body, high mechanical resistance**
- **Good selectivity**
- **Fast response**
- **Suitable for measures in wide concentration range**
- **Short conditioning time**
- **Standard dimensions: 12 mm ∅, 120 mm length**

Operating principle and realization

Mod.201NH_3 electrode allows direct measure of ammonia in aqueous solutions.
The answer is fast and accurate and is not influenced by turbidity and colour of the sample.
The electrode includes a special pH electrode and a reference electrode, immersed in an electrolyte solution which is separated from the sample by a permeable membrane. The membrane is selective to ammonia.
Measuring range is $5x10^{-7}$ M to 1 M ammonia (corresponding to 0.01÷17000 ppm NH_3 and 0.01÷14000 ppm N).
The measure, when properly carried out, is free of interferences, except for volatile ammines.
Electrode body is made of plastic material.

Calibration & Maintenance

The electrode can be dry stored for long periods, when not in use. Electrode conditioning is operated by keeping it immersed in internal electrolyte for 2 hours.
Electrode response is fast when passing from diluted to concentrated solutions, while it becomes a little slower when passing from concentrated to diluted solutions.
It is therefore recommended to calibrate the ammonia analyser starting from the less concentrated solution.
During the measures it is recommended to allow a stabilization time when passing from a sample to a different one.
Calibration is to be performed with standard solutions prepared according to Instruction Manual.
If the electrode is connected to a ion meter with logarithmic scale the calibration can be directly performed in NH_3 concentration units; if the electronic unit has a mV reading (resolution should be 0.1 mV) the operator should plot a calibration curve on a semi logarithmic paper, with NH_3 concentration (mol/L) on X axis (logarithmic axis) and mV readings (voltage difference between measuring electrode and reference electrode) on the Y axis (linear axis).
The slope of this curve depends upon sample temperature.

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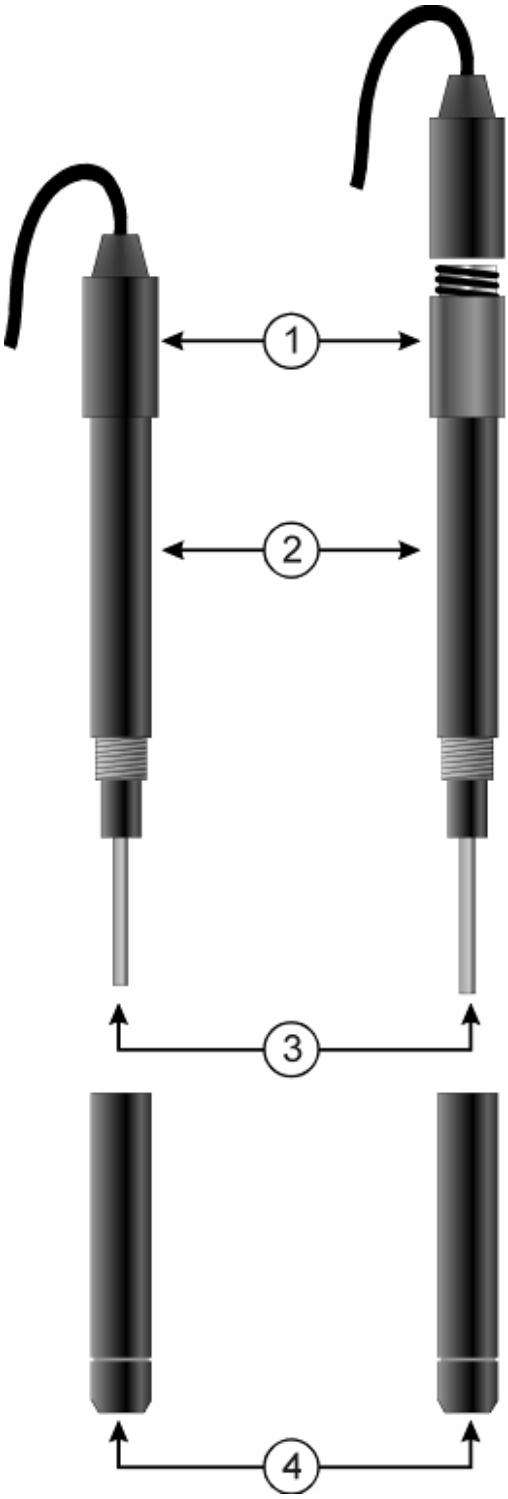
Technical Specifications

Generated signal: ..... potential, mV, proportional to log[NH_3]
Measuring range:.....$5x10^{-7}$÷1 M (0.01÷17000 ppm)
Measure conditions:..... pH>11.0, adjusted with ISA solution;
..... aqueous solution, ionic strength < 0.2 M
Response time:..... for [NH_3] > $4x10^{-6}$ M and from lower
.....concentration to higher concentration solutions
.....less than 1 minute for 95% of response.
.....The time increases when passing from higher to lower
.....concentration solutions and for very low
.....concentration measurements.
Slope:.....direct potenziometria, a 20 °C, 58 mV/decade ±1 mV;
..... slope depends upon temperature
Allowed samples:..aqueous solutions. Surface active substances
..... decreases life expectancy of membrane
Max. allowed ionic strength: ..... 0.2 M
Sample volume: ..... best more than 20 ml (in order to optimize volume/surface ratio). For low concentrations use larger volumes
Interferences:..... volatile amines
Operating temperature limits: ..... 0÷50 °C
Dimensions:..... ∅ 12 mm x 120 mm
Materials: ..... electrode body and membrane in plastic material
Operative life: ..... electrode: longer than one year;
..... membrane: some weeks to some months
Cable:...integral or with threaded connector, standard length 1 m

Optional Accessories

Maintenance kit, composed of:
10 membranes, 1 electrolyte solution bottle.....201/NH3-CA

Cable c/w connector on electrode side.....CV/S7-x
where x = cable length, in meters (x = 1, 3, 5, 10, 15, 20)



ELECTRODE FOR AMMONIA MEASUREMENTS
1 = CABLE/CONNECTOR
2 = ELECTRODE BODY
3 = MEASURING ELECTRODE
4 = MEMBRANE HOLDER