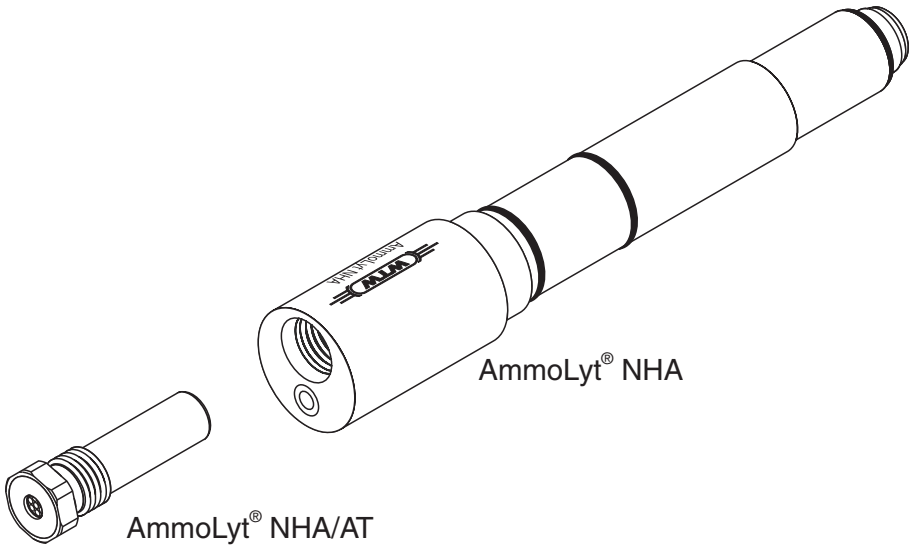
Operating Manual

AmmoLyt® NHA
AmmoLyt® NHA/AT



AmmoLyt® Ammonium combination electrode

AmmoLyt® NHA reference electrode
AmmoLyt® NHA/AT exchange electrode

ba75358e03 12/2005

Accuracy when going to press

The use of advanced technology and the high quality standard of our products are the result of continuous development. This may result in differences between this operating manual and your electrode. Also, we cannot guarantee that there are absolutely no errors in this manual. Therefore, we are sure you will understand that we cannot accept any legal claims resulting from the data, figures or descriptions.

Note
The latest version of the present operating manual can be found on the Internet under www.WTW.com.

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Contents

Overview 14

Assembly 15

Response times 16

Aging 16

Factors affecting the measured values 16

Maintenance 17

Cleaning 17

Storage 17

Accessories 18

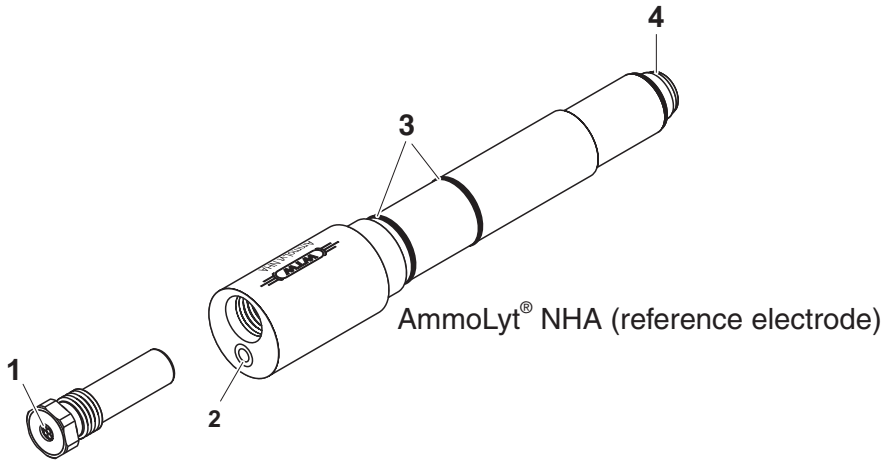
Technical data 19

Overview

The AmmoLyt® combination electrode forms a measuring system for the online determination of ammonium ions. It supplements the oxygen measurement in the aeration tank and enables an efficient aeration control.

The AmmoLyt® combination electrode is used in the AmmoLyt® 700 IQ sensor.

Structure of the AmmoLyt® combination electrode



AmmoLyt® NHA (reference electrode)

AmmoLyt® NHA/AT (exchange electrode)

1	Membrane
2	Junction
3	Sealing rings for installation in AmmoLyt® 700 IQ
4	Plug head connector



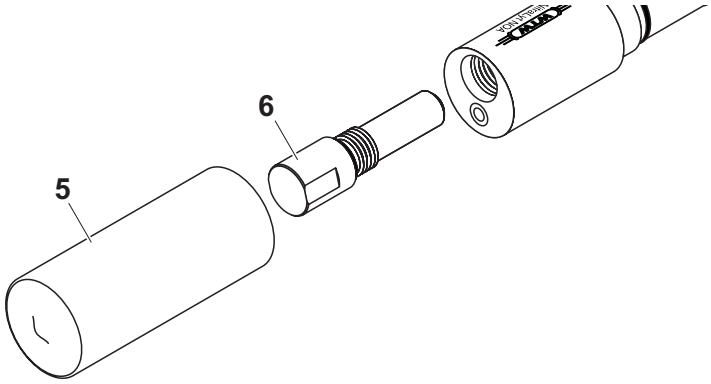
Caution

The membrane and junction of the electrode must never

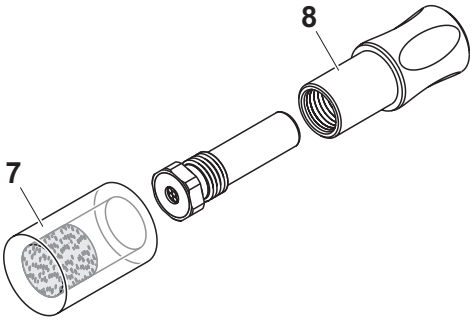
- **dry up (observe notes on storage)**
- **be damaged**
- **be brought into contact with grease.**

Assembly

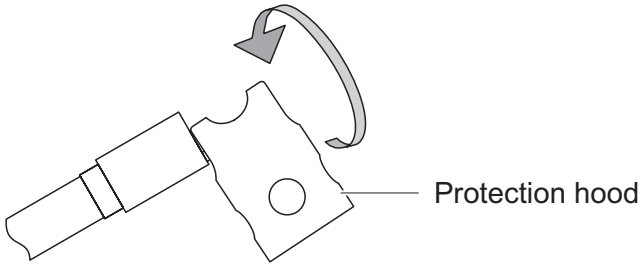
Installing the AmmoLyt® NHA/AT in the AmmoLyt® NHA reference electrode



1	Remove the wet cap (5) and blind plug (6) from the reference electrode. Store both accessories. You need them if you want to store the reference electrode.



2	Remove the watering cap (7) and nut (8) from the exchange electrode. Store both accessories. You need them if you want to store the reference electrode.
3	Screw the AmmoLyt® NHA/AT exchange electrode into the AmmoLyt® NHA reference electrode without leaving any gap. A flat wrench (wrench size 13 mm) or the protective hood of the sensor is suitable as a wrench (see following figure).



Note
After installing the electrode tap your finger against the combination electrode to remove any air bubbles from the back of the membrane. When doing so hold the electrode in an upright position (membrane downward).

Installing the combination electrode in the AmmoLyt® 700 IQ sensor

Instructions on how to install the combination electrode in the sensor are given in the operating manual of the sensor.

Response times

The response time depends on the concentration range. It is

- several seconds at high concentrations,
- several minutes near the detection limit.

Aging

Every electrode undergoes a natural aging process. The response time increases and the slope decreases with the age of the electrode. The following factors shorten the lifetime considerably:

- Incorrect storage
- Special measuring conditions (e.g. organic solutions, frequent measurement with high concentrations of interfering ions)
- High temperatures and high temperature changes

Caution
Greases, oils, certain tensides and similar substances can shorten the operational lifetime of the electrodes. Therefore, they should not be present in the test sample.

The warranty does not cover damage caused by measuring conditions and mechanical damage.

Factors affecting the measured values

Interferences

- pH-value
- Potassium ions

Note
The effect of chloride ions on measurement and compensating actions are described in detail in the WTW primer ION SELECTIVE MEASUREMENT IN ONLINE ANALYSIS.

Maintenance

In the case of increased response times or drifting measured values, store the electrode in the standard solution ES/NH4_ISA-10 (ordering information, see section ACCESSORIES) for several hours. Subsequently, recalibrate.

Cleaning

Contamination	Cleaning
Coarse contamination on the junction of the AmmoLyt® NHA reference electrode	Carefully brush off contamination under running water using a soft toothbrush.
Contamination on the membrane of the AmmoLyt® NHA/AT exchange electrode	Splash the electrode with water. Remove coarse contamination using a soft toothbrush under running water.

Storage

1 to 2 days

Attach the wet cap to the combined electrode with the exchange electrode screwed in. Before doing so, wet the foam padding in the wet cap with several drops of (pipe) water.

More than two days

Uninstall the exchange electrode and store the components as follows.

Reference electrode:
Screw in the blind plug, wet the foam padding in the wet cap with deionized water and plug on the wet cap.

Exchange electrode:
Screw the exchange electrode into the nut up to the stop. Before doing so, wet the foam padding in the watering cap with ES/NH4_ISA-10 standard solution (ordering information, see section ACCESSORIES). Subsequently, plug the exchange electrode into the wet watering cap.

Accessories

Ammonium electrodes

Designation	Order no.
AmmoLyt® NHA	107004
AmmoLyt® NHA/AT	107006

Protective hood

Designation	Order no.
AmmoLyt® IQ-SK	107016

Standard solutions for ammonium calibration

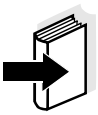
Designation		Order no.
ES/NH4_ISA-1	1 mg/l NH4-N; 1000 ml	107010
ES/NH4_ISA-10	10 mg/l NH4-N; 1000 ml	107012
ES/NH4_ISA-100	100 mg/l NH4-N; 1000 ml	107014
SL NH4 19812	1000 mg/l NH4; 500 ml	250461
ES/NH4	10 g/L NH4; 1000 ml	120240



Note
Further information can also be found in the operating manual of the sensor AmmoLyt® 700 IQ.



Note
Information on other IQ SENSOR NET accessories is given in the WTW catalog and on the Internet.



Note
Information on the fundamentals of measuring with ion sensitive electrodes are given in the WTW primer, ION SELECTIVE MEASUREMENT IN ONLINE ANALYSIS.

Technical data

Ammonium range

mg/l NH4-N	0,1 ... 1000 mg/l
mg/l NH_4^+	0,1 ... 1290 mg/l

Temperature range

Operation	0 °C ... 40 °C (32 ... 104 °F)
Storage/transport	0 °C ... 40 °C (32 ... 104 °F)

Response time at 20 °C

< 3 min
(when concentration changes from 10 mg/l to 100 mg/l NH4-N)

Type of protection

IP 68; 0.2 bar
(complete combination electrode, mounted in the AmmoLyt® 700 IQ sensor)

Connection technique

Connection via S7 plug head connector

Material

Enclosure: AmmoLyt® NHA AmmoLyt® NHA/AT	 PVC POM
Junction (AmmoLyt® NHA)	PP
Membrane (AmmoLyt® NHA/AT)	PVC, soft
Blind plug	PVC
Wet cap	PVC
Watering cap	Silicone

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