

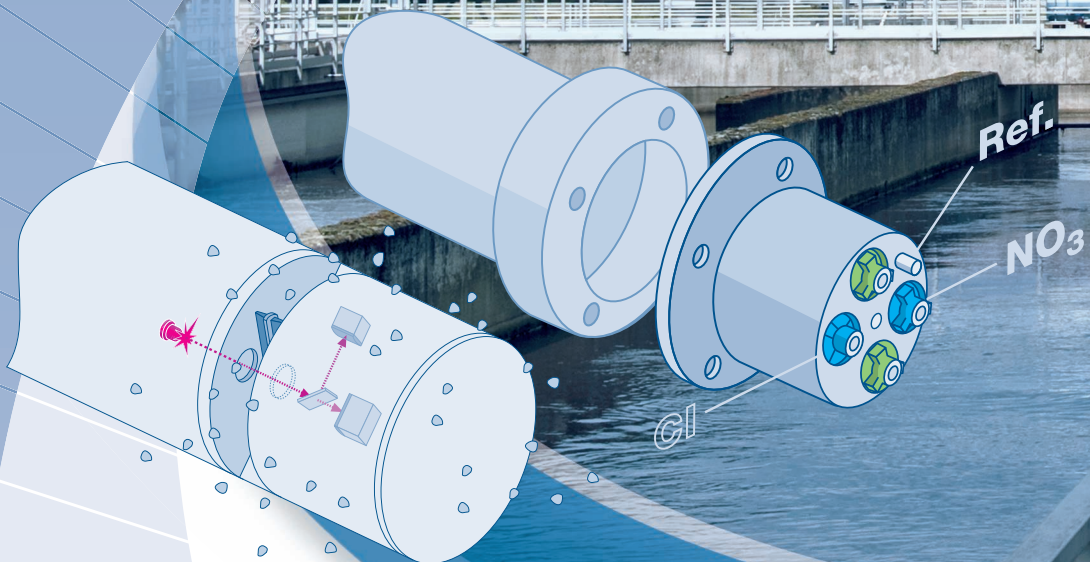
INFORMATION

PROCESS ANALYSIS

NITRATE

NISE SC / NITRATAX SC

NEW!



COST EFFECTIVE MEASURING

Nitrate Measurement

Nitrate probes with UV and ISE technology



UNITED FOR WATER QUALITY

Nitrate measurement with HACH LANGE

The right probe for every requirement

Welcome to our latest range of ion selective and optical process probes. Thanks to decades of experience in the development and use of nitrate probes, we are familiar with the practical requirements of sewage treatment plants of all sizes. This is why you can be sure of finding the right solution for your application.



NITRATAX plus sc

- Precise universal process probe
- For water, wastewater and activated sludge
- Optical measurement method



NITRATAX eco sc

- Cost effective process probe
- Ideal for sewage plants with intermittent aeration
- Optical measurement method



NITRATAX clear sc

- Precise clear water probe
- For drinking water and sewage plant outflows
- Optical measurement method



NISE sc

- Precalibrated CARTRICAL plus cartridge
- For trend measurements in water and wastewater
- Ion-selective electrode (ISE)

Where would you like to measure nitrate?

APPLICATION	MEASUREMENT LOCATION	NITRATAX plus sc	NITRATAX eco sc	NITRATAX clear sc	NISE sc
Monitoring denitrification	Denitrification tank outflow	●			○
Controlling the dosage of external carbon sources	Denitrification tank outflow	●			●
Controlling recirculation	Denitrification tank outflow	●			○
Monitoring nutrient elimination	Aeration tank outflow	●	●		●
Controlling nitrification (intermittent)	Aeration tank outflow	●	●		●
Monitoring in the outflow	Sewage plant outflow	●		●	
Drinking and surface water		●		●	○

Application options ● Suitable ○ Limited suitability

The suitability of the probes for your specific application should be clarified with HACH LANGE



What must your probe do?



I need a reliable low maintenance probe that can supply exact data from all parts of the plant. The precise monitoring of limit values for reporting to official bodies is especially important.

My ideal probe: **NITRATAX plus sc**

I need a cost effective solution for the control of my intermittent plant. My preferred option is a low maintenance optical method. My preferred probe is: **NITRATAX eco sc**

I need an optical measurement probe to determine low nitrate concentrations in the outflow of my sewage plant. I carry out measurements in clear water.

My favourite is: **NITRATAX clear sc**

I need a reliable ISE probe to carry out trend measurements for the control of my small sewage plant. The probe must be easy to handle and the investment costs must be as low as possible.

My choice: **NISE sc**

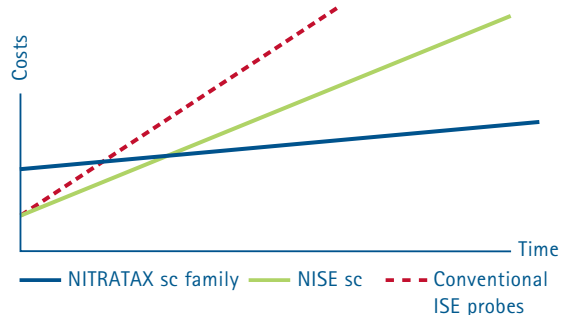


And your costs?

NISE sc is your low investment gateway to online nitrate measurement. Thanks to the CARTRICAL technology, the running costs are lower than those of conventional ISE probes.

Your investment in the NITRATAX sc family is soon paid back, thanks to the low maintenance costs of the self cleaning optical probes.

COST TREND

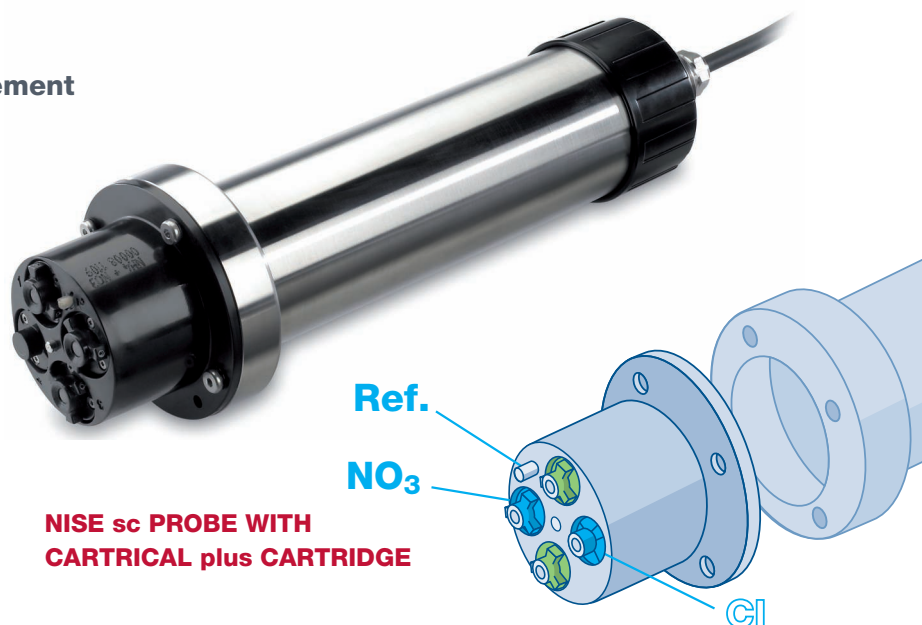


NISE sc: simple handling and low investment costs

The NISE sc probe and CARTRICAL plus cartridge set new standards in nitrate measurement using ion-selective electrodes (ISE). The unique CARTRICAL technology ensures continuously reliable trend measurements and minimises maintenance time and costs relative to conventional ISE probes.

- **Simple handling and long-term reliable measured values through CARTRICAL plus cartridge**
- **Calibration-free ISE nitrate probe with automatic chloride compensation**
- **Highly cost effective trend measurement**

NEW!



Calibration-free and consistently reliable

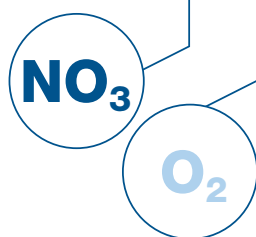
The CARTRICAL plus cartridge encloses three electrodes that have been perfectly calibrated to each other before leaving the factory. If necessary, a matrix correction can be carried out at any time. Cross sensitivities between nitrate and chloride are automatically eliminated.

Simple to use and cost effective to operate

The compact CARTRICAL plus cartridge replaces the usual three separate electrodes and makes handling as simple as possible. After exchanging the cartridge, the probe is immediately ready for use. The low purchase costs of the NISE sc probe enable even small and medium sized sewage plants to measure nitrate concentrations reliably.

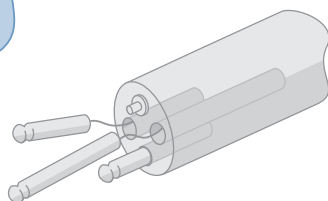
CARTRICAL TECHNOLOGY

The compact CARTRICAL plus cartridge puts an end to tedious manipulation and calibration of individual electrodes: just remove the old cartridge, insert a new one.



SC 200 CONTROLLER

The NISE sc probe can be combined with the 2 channel SC 200 Controller to create a cost effective total system. E.g. measurements of oxygen can be carried out in parallel on the second channel. The controller has a wide range of functions and can be integrated into a network through an optional field bus connection.



CONVENTIONAL ISE PROBE

Reliable trend measurements with ISE

The determination of nitrate is crucial to the efficient control of the nitrification process and the addition of exactly the right amount of external carbon. The NISE sc uses ion-selective electrodes to make continuous in-situ measurements. No reagents or sample preparation are required. There is automatic compensation for chloride interference. The integrated pH reference element ensures the long-term stability of the measured values.

Technical data of NISE sc probe

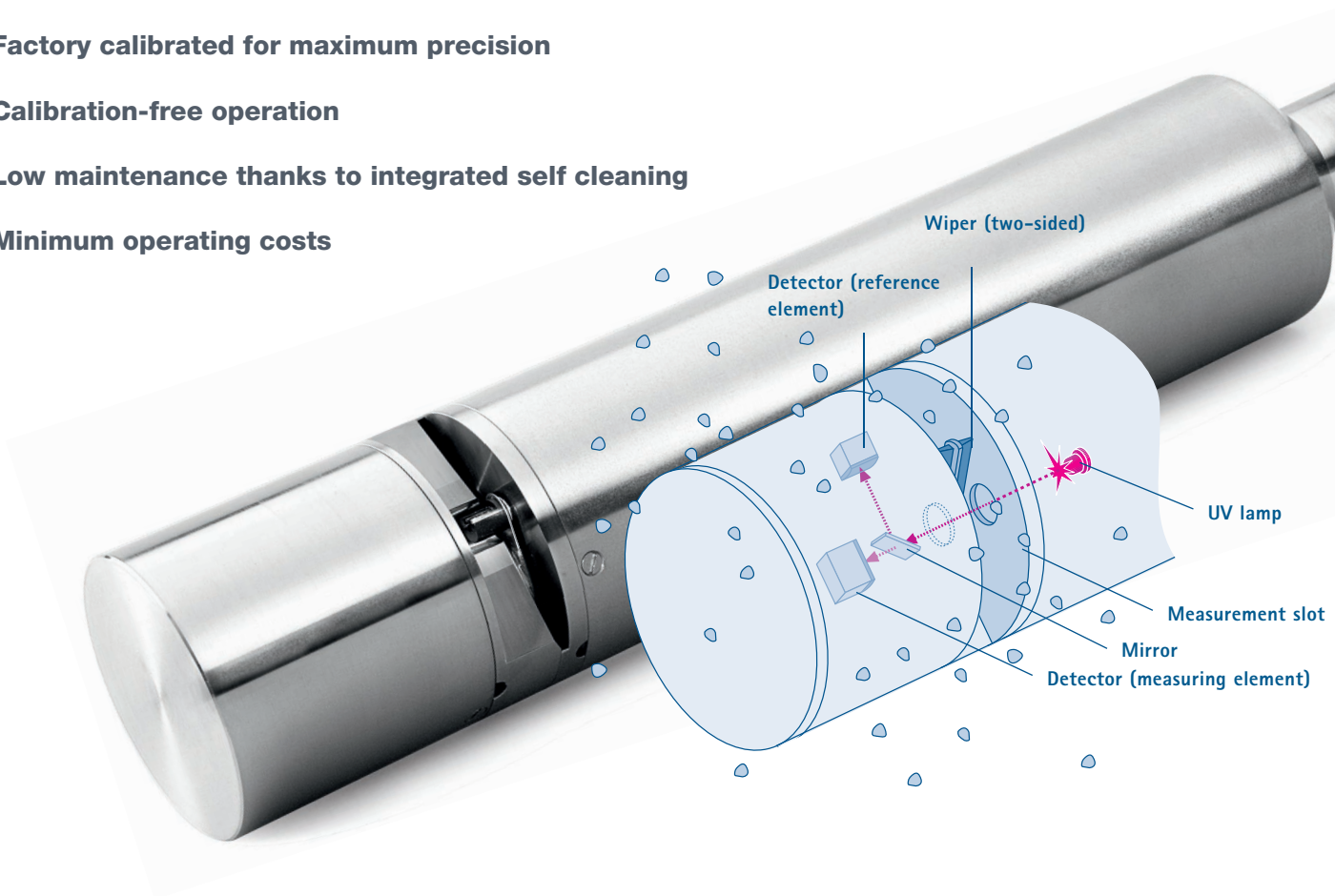
NISE sc probe with CARTRICAL plus sensor cartridge	Article no. LXV440.99.20001
CARTRICAL plus sensor cartridge	Article no. LZY694
Measurement method	Ion-selective electrode for nitrate and chloride, pH reference
Measuring range	0-1,000 mg/L NO ₃ -N, 0-1,000 mg/L Cl ⁻ (compensation)
Lower limit of detection	0.5 mg/L NO ₃ -N
Measurement uncertainty	5% or ±0.2 mg/L (with standard solution)
Response time	<3 min.
Sensor cartridge	With CARTRICAL technology, typical lifetime 12 months
Calibration	Factory-calibrated sensor cartridge with sensor code; optional 1-point or 2-point inline matrix or value correction is possible
Temperature	Air -20 to +45 °C, water +2 to +40 °C
pH range	5-9
Flow	<4 m/s
Immersion depth	0.3-3.0 m
Material	Stainless steel, PVDF (Ryton®)
Dimensions, weight	84.5 mm x 320 mm (D x L), approx. 2.4 kg
Connection	For SC controller, e.g. SC 200, SC 1000
Installation accessories (optional)	Tank side mounting, automatic cleaning unit with compressor

Subject to change

The NITRATAX sc family: maximum precision and minimum operating costs

The optical UV measurement method of the NITRATAX sc family brings clear advantages. Particularly in terms of process optimisation and precise documentation of limit values wherever nitrate is selectively degraded or has to be consistently monitored. The probe can be configured for applications ranging from drinking water to activated sludge in the wastewater treatment sector.

- Proven optical system for difficult applications
- Factory calibrated for maximum precision
- Calibration-free operation
- Low maintenance thanks to integrated self cleaning
- Minimum operating costs



Reliable measured values in any matrix

The optical method of the NITRATAX sc family measures nitrate highly specifically in the UV range. Other substances that are present in the matrix of real samples are not measured. This keeps the risk of interference or faulty measurements to a minimum.

Minimum installation and maintenance costs

The factory calibrated probes are immediately ready for use thanks to the plug and play technology. Integrated automatic cleaning is a standard feature. The highly efficient two-sided wiper keeps the optical system free of blockages, growths and deposit, assuring an especially long lifetime.

The NITRATAX sc principle

Nitrate dissolved in water absorbs UV light. This property enables the nitrate concentration to be determined photometrically directly in the medium without reagents, without sampling and without delay.



SC 1000 DIGITAL CONTROLLER

The multifunctional SC 1000 digital controller allows up to eight SC sensors to be connected. A portable touchscreen module makes it easy to operate. The SC 1000 digital controller has a variety of control and calculation functions, supports field bus, ethernet connection (MODBUS TCP/IP) and GPRS. It has an integrated webserver for cost effective connection, even to the most poorly accessible locations.

Technical data of NITRATAX sc family

	NITRATAX plus sc	NITRATAX clear sc	NITRATAX eco sc
Article no.	(1 mm) LXV417.99.10001 (2 mm) LXV417.99.20001 (5 mm) LXV417.99.50001	LXV420.99.50001	LXV415.99.10001
Measurement method	UV absorbance measurement, reagent-free 2-beam method		
Measuring range (with standard solutions)	0.1-100.0 mg/L NO ₂₊₃ -N (1 mm) 0.1-50.0 mg/L NO ₂₊₃ -N (2 mm) 0.1-25.0 mg/L NO ₂₊₃ -N (5 mm)	0.5-20.0 mg/L NO ₂₊₃ -N	1.0-20.0 mg/L NO ₂₊₃ -N
Measurement uncertainty	3 % or ±0.5 mg/L (with standard solution)	5 % or ±0.5 mg/L (with standard solution)	5 % or ±1.0 mg/L (with standard solution)
Path length	1, 2 and 5 mm	5 mm	1 mm
Response time	>1 min.	>5 min.	>15 min.
Sludge compensation	Yes	-	Yes
Pressure resistance of probe	Max. 0.5 bar		
Ambient temperature	+2 °C to +40 °C		
Cleaning	Automatic wiper cleaning		
Material	Stainless steel		
Dimensions (D x L)	Approx. 70 mm x 333 mm	Approx. 75 mm x 327 mm	Approx. 75 mm x 323 mm
Weight	Approx. 3.6 kg	Approx. 3.3 kg	Approx. 3.3 kg
Connection	For SC Controller, e.g. SC 200, SC 1000		
Installation accessories (optional)	Tank edge mounting, flow cell		Tank edge mounting

Subject to change

Nitrate measurement with HACH LANGE

One stop solutions



Process probes

NISE sc and the NITRATAX sc family have the right solution for all your requirements.

Diagnosis function of the SC 1000 Digital Controller

The SC probes have an integrated self-diagnosis function. This keeps you constantly informed of the status of your sensors and the plausibility of the measurement results.

Laboratory analysis

Measure nitrate in the laboratory with a perfectly coordinated measurement system made up of the proven HACH LANGE cuvette tests, standards, spectrophotometers and accessories.

Service/Maintenance

Our qualified technicians are available on site. From installation through to flexible service and maintenance contracts, we ensure the reliability of your nitrate analysis.

Seminars/Workshops

Increase the efficiency and measurement reliability of your plant through basic and advanced training courses. We offer seminars and workshops on laboratory and measurement technology.

Quality assurance

Use our ADDISTA sets to check your analysis systems at regular intervals. Standard solutions and free round robin tests ensure comparable results for process and laboratory analysis.

HACH LANGE – the specialists for water analysis

Everything from a single supplier

Whether field or laboratory analysis, samplers or process measurement technology, HACH LANGE stands for the total spectrum of water analysis. From visual methods to comprehensive systems of reagents, measurement technology and accessories.

For every application

Solutions from HACH LANGE are tailor-made for wastewater, drinking water or process water – for reliable control of operational processes and monitoring of legally prescribed limit values.

Parameters from A to Z

From Ammonium to Zinc – consistently user friendly and proven in daily practice. Regulatory bodies and industry know they can rely on HACH LANGE solutions for everything from sample preparation to quality control.