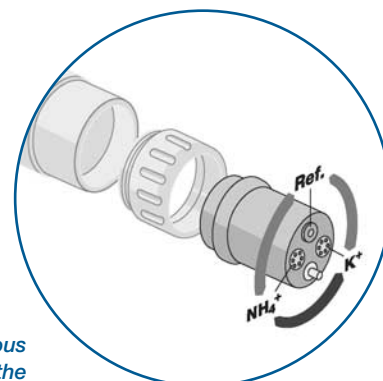


NH4D sc Ammonium Sensor with CARTRICAL™ Technology



The Hach NH4D sc Ammonium Sensor provides continuous trending of ammonium levels in the aeration basin to control the nitrification process. Exclusively from Hach, CARTRICAL™ technology reduces interferences providing greater accuracy.

Features and Benefits

A New Approach to ISE Technology— CARTRICAL™

The Hach NH4D sc Ammonium Sensor uses an ion-selective electrode (ISE) to detect ammonium ions (NH_4^+) directly in the aeration basin as ammonium nitrogen ($\text{NH}_4\text{-N}$). A pHD (differential pH) electrode is used as the reference electrode for superior stability. The most significant potential interference is from potassium ions (K^+) which is compensated through the use of an integrated potassium ISE to correct the ammonium value. Potential interferences are further reduced using CARTRICAL technology. CARTRICAL calibrates each electrode individually and calibrates all three electrodes to each other. A temperature sensor is also included to improve accuracy.

Insitu—No Sample Preparation

The NH4D sc sensor is designed for immersion directly in the aeration basin eliminating the need for sample preparation. It installs quickly outdoors without special housing. The sensor can easily be relocated to various locations for greater knowledge about the process.

Compact Cartridge Simplifies Maintenance

The NH4D sc sensor uses a calibrated sensor cartridge that should be replaced approximately twice a year (in typical operating conditions). No electrolyte or reagents to change. Cartridge replacement only takes minutes—just remove the old cartridge, plug in the new, and enter the sensor code. Maintenance is also minimized because sample pumps, valves, tubing, or filtration devices are not needed.

Economical Continuous Measurement

Real time measurements of ammonium in the aeration basin can be used to more effectively control the nitrification process. The low purchase price makes the NH4D sc the perfect tool for providing more visibility into daily trends to enable optimization of nutrient removal.

Optional Automatic Cleaning System

A specially-designed air cleaning unit is available for the NH4D sc sensor. Air is directed at each of the three individual electrodes for optimal cleaning. A compact compressor is available to provide pressurized air for the cleaning unit with weather-proof housing suitable for tank-side installation without additional structural requirements.

Plug and Play with Hach sc Digital Controllers

The Hach NH4D sc Ammonium Sensor is “plug and play” ready to use with the Hach sc100 or sc1000 Controllers. Complicated wiring or set-up procedures are not necessary. The sc100 controller can accept up to two sensors while the sc1000 controller can accept up to eight sensors.

Applications

- Municipal wastewater treatment plants with less than 30% industrial waste
- Aeration basin (profile multiple trains)
- Control feeding of centrate/filtrate back into the process

DW = drinking water WW = wastewater municipal PW = pure water / power
IW = industrial water E = environmental C = collections FB = food and beverage



Be Right™

Specifications*

Measurement Method

Ion-selective electrodes for ammonium and potassium with pH reference electrode and temperature sensor

Range

0.2 to 1000 mg/L NH₄-N

Accuracy

5% of measured value ±0.2 mg/L (with standard solution)

Detection Limit

0.2 mg/L

Response Time

Less than 2 minutes (T90)

Operating Temperature

-20 to 45°C (-4 to 113°F)

Sample Temperature

0 to 40°C (32 to 104°F)

Sample pH

5 to 9

Sensor Immersion Depth

0.3 to 3.0 m (1 to 10 ft.) maximum

Sample Pressure

0.3 bar (4.4 psi) maximum

Storage Temperature

Sensor: -20 to 60°C (-4 to 140°F)

Sensor Cartridge: 5 to 40°C (41 to 104°F)

Calibration

Sensor cartridge, calibrated (sensor code contains factory calibration in code form)

Entry of sensor code calibrates the sensor

No standard solutions needed

Optional: 1- or 2-point inline matrix correction adapts sensor to the wastewater matrix

Certifications

CE approved

Sensor Construction

316 stainless steel with Ryton® ends

Dimensions

48 x 361 mm (1.9 x 14.2 in.)

Cable Length

Standard: 10 m (33 ft.)

Optional Extensions: 7.6 m (25 ft.), 15.2 m (50 ft.), or 30.5 m (100 ft.)

Maximum Total Length: 100 m (328 ft.)

Weight

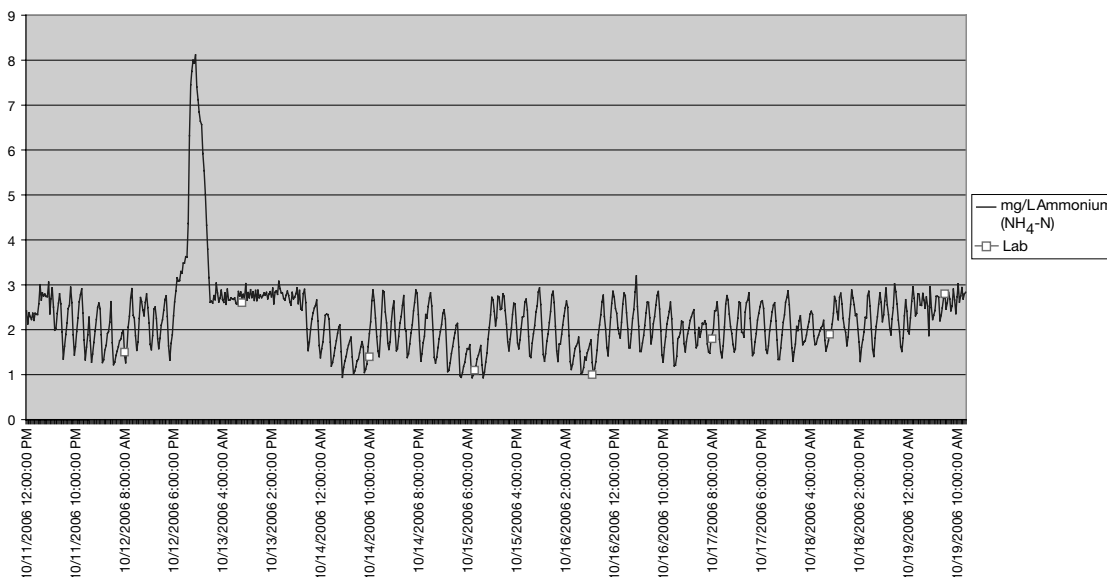
1.3 kg (2.9 lbs.)

Warranty

2 years

Ryton® is a trademark of Phillips Petroleum Company.

*Specifications subject to change without notice.

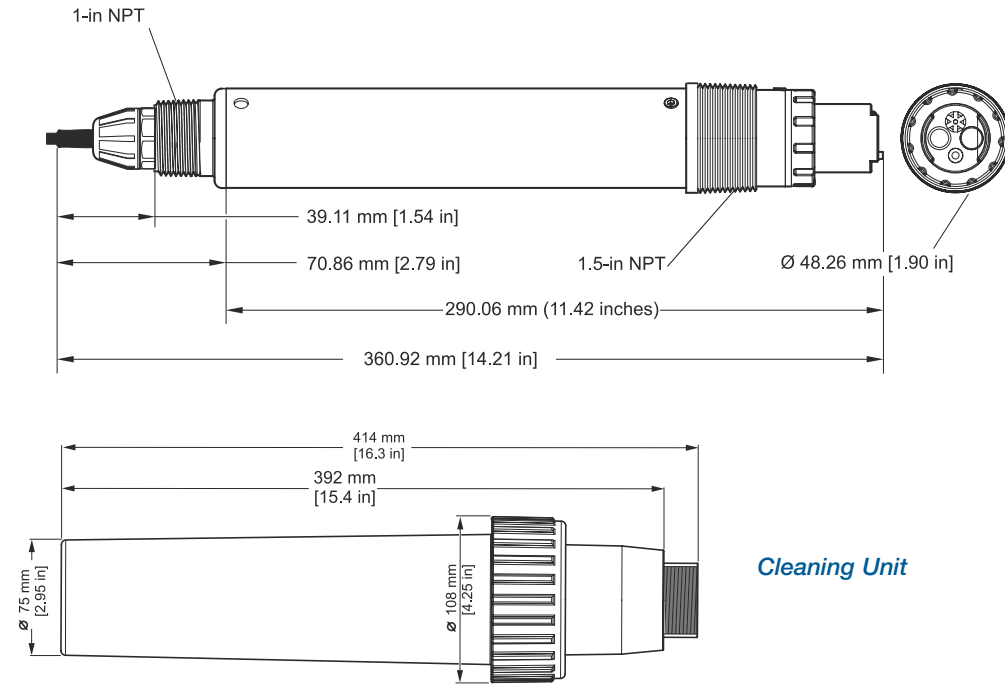


Engineering Specifications

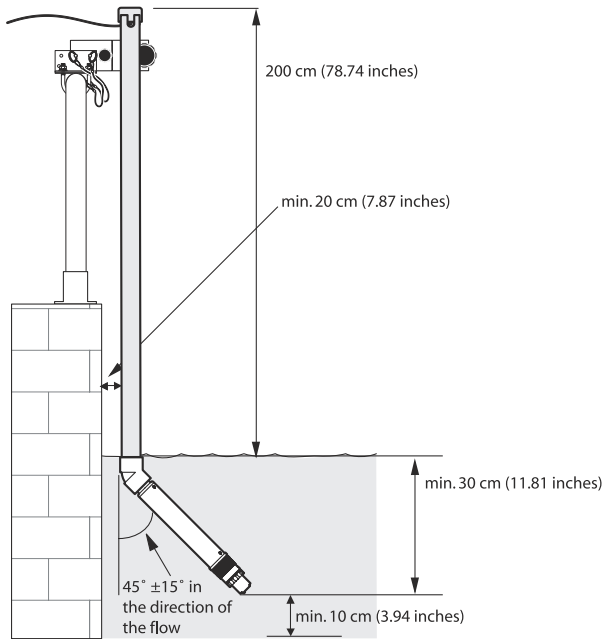
- The ammonium sensor shall consist of a digital sensor designed to connect to a universal controller.
- The ammonium sensor shall be a continuous-reading sensor that utilizes ion-Selective Electrode (ISE) technology for ammonium and potassium with pH reference electrode and temperature sensor.
- The sensor cartridge shall be factory calibrated with all electrodes calibrated to each other and integrated in a one-piece design.
- The sensor body shall be 316 stainless steel with ends made of Ryton®. All parts of the sensor shall be corrosion resistant and fully-immersible.
- The measurement range shall be 0.2 to 1000 mg/L NH₄-N.
- The sensor shall compensate for the interference effects of potassium and temperature.
- The sensor shall operate without the requirement of sample conditioning.
- The sensor shall be offered with optional cleaning device that encloses the entire sensor.
- The optional cleaning device can either take compressed air from the plant supply or from an onsite compressor supplied by the manufacturer.
- The sensor shall be furnished with a choice of rail or chain mount kit.
- The sensor shall be capable of performing a one or two-point inline matrix correction to adapt the sensor to the wastewater matrix.
- The sensor shall be the NH4D sc Ammonium Sensor, manufactured by Hach Company.

Dimensions

The Hach NH4D sc Ammonium Sensor can be mounted using the Rail Mount or Chain Mount Kit (see ordering information), with or without the optional cleaning unit.

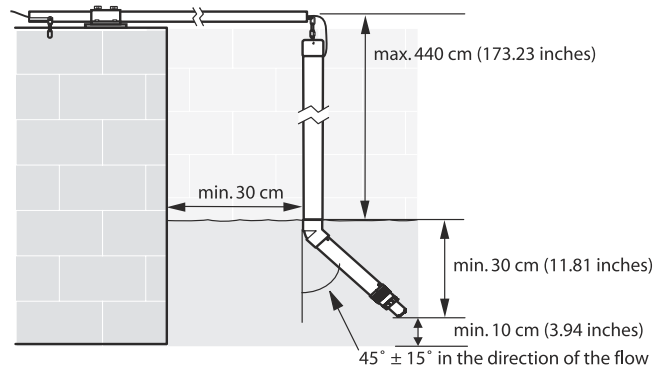


Installation Examples



Note: Ensure the sensor cannot make contact with the tank wall

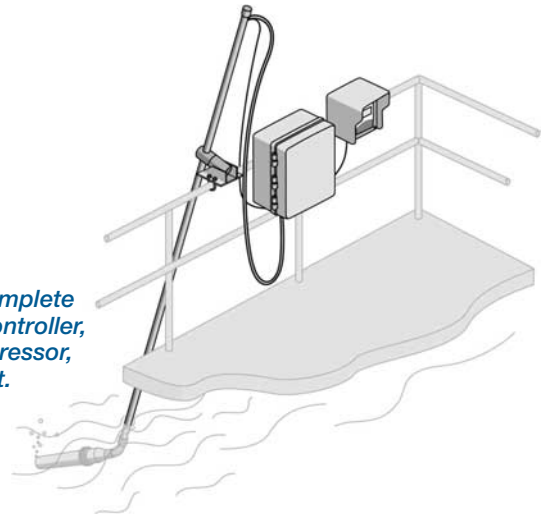
Rail Mount



Note: Ensure the sensor cannot make contact with the tank wall

Chain Mount

NH4D sc sensor as complete system with Hach sc controller, sensor, optional compressor, and cleaning unit.



Ordering Information

LXV437.99.00002 NH4D sc Ammonium Sensor, includes 10 m (32.8 ft.) integral cable and a calibrated sensor cartridge

Mounting Kits

6184900 Rail Mount Kit

LZX914.99.12400 Chain Mount Kit

Accessories

LZY331 Cleaning Unit

6174100 High Output Air Blast Cleaning Compressor, 115 Vac

6174200 High Output Air Blast Cleaning Compressor, 230 Vac

Replacement Parts

6188400 Calibrated Sensor Cartridge

To complete your ammonium measurement system, choose from these Hach controllers...

Model sc100 Controller

(see Lit. #2463)

The Model sc100 Controller receives data from one or two sensors. Its "plug and play", mix-and-match operation lets it fit into any facility or workflow. Digital communication with any Hach digital sensor or probe is simple and reliable.



Model sc1000 Controller

(see Lit. #2403)

Get the same great features as the sc100 Controller above—"plug and play", all digital operation and communication—but with the Hach sc1000 Controller, up to eight Hach sensors can be used with one controller in any combination. The sc1000 Controller is also expandable and upgradeable to easily adapt to your needs.



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In the interest of improving and updating its equipment, Hach Company reserves the right to alter specifications to equipment at any time.

At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

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Be Right™