

Amtax™ compact Ammonia Analyzer

Accurate, compact and affordable ammonia monitoring

One member of Hach's family of nutrient analyzers, the Hach Amtax compact Ammonia Analyzer continuously measures ammonia concentrations in the wastewater treatment process stream. Using an innovative liquid to gas-phase transfer principle and proven colorimetric technology, the Amtax Analyzer provides ammonia measurements that are reliable and accurate, yet requires minimal maintenance. With a compact footprint and an affordable price, the Amtax is an efficient and economical alternative to instruments that rely on maintenance-intensive electrodes.

Easy to use, the Amtax Analyzer works in combination with Hach's Filtrax™ sample filtration system – an elegantly engineered ultra-filtration, sample conditioning system. Together, they simplify the critical job of monitoring and controlling levels of ammonia in wastewater management.

Applications: Key checkpoints during wastewater treatment

As more wastewater plants move toward monitoring and controlling nutrients (primarily ammonia, phosphates, and nitrates), the Amtax Ammonia Analyzer answers the industry need for accuracy with affordability. The Amtax Analyzer can determine the concentration of ammonia in the plant influent, the aeration tank, or the final plant effluent. By using multiple analyzers to monitor the treatment process, operators can implement process corrections more quickly, thereby reducing the cost of operation and ensuring that effluent meets required standards.

Principle of operation

The Amtax Analyzer typically operates in tandem with Hach's Filtrax™ sample filtration system – the first in-situ, self-cleaning, sample-conditioning system. The Filtrax pulls a sample of wastewater directly from the selected location and feeds it through one of two immersed filter membranes. Particles greater than 0.15μ are separated from the sample stream, and the conditioned sample is delivered to the Amtax Analyzer.

The Amtax Analyzer utilizes a liquid to gas-phase conversion to expel and measure the exact concentration of ammonia present in the sample. More specifically, the wastewater is drawn into a sample cell and mixed with a measured quantity of sodium hydroxide. The resulting reaction converts all ammonium in the sample to a gas (ammonia), which is expelled from the sample and directed into a measuring cuvette that contains an indicator reagent. The ammonia gas is re-dissolved, changing the pH value of the reagent and the color of the indicator solution. A built-in colorimeter measures the color change of the solution, and the reading is converted to mg/L of $\text{NH}_4\text{-N}$ and clearly displayed on the LCD readout.



The Hach Amtax™ compact Ammonia Analyzer

- Innovative liquid to gas-phase transfer methodology
- Convenient, accurate, proven colorimetric technology
- Compact and efficient
- Economical and easy to use
- Automatic self-cleaning and calibration



Be Right™

Genuine Hach reagents, guaranteed accuracy

Hach's rigorous quality control program ensures that all reagents (expulsion and indicator solutions) and standards used with the Amtax Ammonia Analyzer meet Hach standards for purity and stability, ensuring dependable results with every test.

The system is designed for both accuracy and economy. The analyzer consumes only 237mL of both expulsion solution and standard each month, and 1 liter of indicator. Reagents are easily replenished without interrupting sample flow.

Automatic, reliable operation

Operating unattended for up to 30 days, the Amtax Analyzer auto-calibrates, self-cleans and self-primes. A menu-driven interface makes it easy to set the frequency of all functions.

Calibration

Regular, automatic calibration with standard solution ensures consistently accurate performance. A calibration history can easily be displayed on the analyzer's LCD display.



Hach's family of nutrient analyzers

Addressing the wastewater industry's movement toward increased monitoring and control of nutrients (e.g., ammonia, phosphates, and nitrates), Hach has developed an integrated team of compatible, accurate, and affordable nutrient analyzers. The Amtax Analyzer is complemented by the Phosphax™ compact Phosphate Analyzer and the OptiQuant™ UV Nitrate Analyzer. The Amtax and Phosphax Analyzers typically work with the innovative Filtrax™ sample filtration system for sample conditioning. Each carries the Hach guarantee for quality and reliability.

Filtrax™ — New technology filters in the basin and cleans in-place

The Filtrax sample filtration system is immersed in the treatment tank and automatically cleans the filter membranes in-situ. The system utilizes two filter modules — each spanned by a 0.15µ ultra-filter membrane — and continuously pushes a vigorous stream of air bubbles along the sides of both filter modules to keep the membranes clean. A small, peristaltic pump draws fluid through one filter module at a time, allowing for optimal cleaning of the other. Sampling direct from the basin is continuous and requires little maintenance.

Featuring a 5-meter, heated hose between the filter modules and the control unit, the Filtrax is suitable for outdoor use in virtually any climate. All tubing is completely accessible and easy to replace. No moving parts ever come into contact with fluid. The system continuously monitors the flow rate across the filter media. One programmable alarm relay can be used to alert operators to inspect the Filtrax system when flow decreases. A second

Economical and virtually maintenance-free, the Amtax Analyzer consumes 237mL of both expulsion solution and standard each month, and only 1L of indicator. All parts and tubing are completely accessible and easy to replace.



The new Filtrax sample filtration system operates in-basin, ultra-filters the sample to 0.15µ, and automatically cleans the filter membranes in-situ.

programmable relay can shut the unit down if flow decreases even further.

Rugged enclosure

The Amtax compact Ammonia Analyzer is completely contained within an IP54-rated plastic enclosure.

The control unit for the Filtrax sample filtration system is housed within a heated, heavy duty, IP55-rated stainless steel enclosure. All filter modules and connecting hoses are well protected.

Easy to Maintain

Using only pinch valves and peristaltic pumps, both the Amtax and Filtrax operate without wetted moving parts. Only the tubes come into contact with the sample, thus minimizing maintenance. Designed for efficiency, nothing is hidden or out of reach. All tubing, parts, and reagents are visible, accessible, and easy to replace when necessary.

Software and Graphic Display

All functions of both the Amtax and Filtrax are controlled with easy-to-use software. The systems are operated with menu-driven convenience, and results can be displayed numerically or graphically on the LCD display.

Multiple Samples

The Amtax comes ready to measure a single sample stream. A second sample stream can be added using a convenient kit. An additional kit is available to add alarm relays for the second sample.

Broad Measurement Range

The Amtax compact Ammonia analyzer is available in three measurement ranges, from 0.5 – 1200 mg/L. Changing between ranges is simple — just order a different reagent set and select the desired range in the instrument menu.

Amtax compact Analyzer Specifications*

Range

0.5 - 12.0 mg/L $\text{NH}_4\text{-N}$

5 - 120 mg/L $\text{NH}_4\text{-N}$

50 - 1200 mg/L $\text{NH}_4\text{-N}$

Accuracy

$\pm 2.5\%$ of the measured value or 0.2 mg/L, whichever is greater

Minimum Detection Limit

0.5 mg/L

Cycle Time

13, 15, 20, or 30 minutes (selectable)

Method

Expulsion method with photometric pH indication

Display

Graphics display with progress curve

Outputs

0/4-20 mA, max. 500 ohms

Fault indicator contact: potential-free, 24 V 1A

Alarms

Two programmable threshold value contacts

(min, max), 24V, 1A

Operating Temperature

50° F to 104° F (10 °C to 40 °C)

Operating Maximum Humidity

90% at 104° F (40 °C)

Sample Temperature Range

50° F to 104° F (10 °C to 40 °C)

Sample Flow Rate

Minimum 100 mL/h

Sample Inlet Pressure

1 to 5 psi

Sample Inlet Connection

1/4 inch OD flexible tubing

Drain Connection

1/2 inch OD flexible tubing

Power

100 - 230 VAC, 50/60 Hz

Certification

CE, UL, CSA

Enclosure

IP54 (indoor installation)

Dimensions

25" x 14" x 8.7" (640 mm x 350 mm x 220 mm)

Mounting

Wall or pipe

Shipping Weight

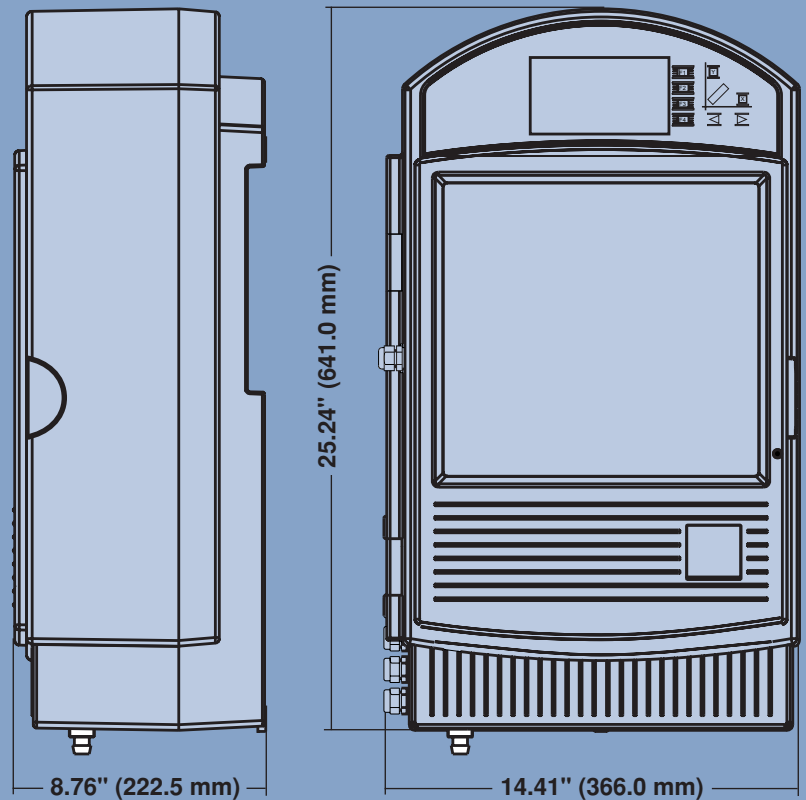
Approx. 22lbs (10kg)

* Subject to change without notice.

Installation

The Amtax compact Ammonia Analyzer is designed for easy wall mounting, indoors, with three #10 screws. Adequate clearance must be allowed at the sides and bottom of the instrument case for plumbing and wiring connections.

The Amtax requires an ambient temperature of between 50° and 104° F (10° to 40 °C). It should be shielded from direct sunlight and dripping water.



Side View

Front View

How to Order

The Amtax compact Ammonia Analyzer is shipped with a one-month supply of reagents, a manual and a one year maintenance kit.

Call Hach today to order the Amtax compact Ammonia Analyzer for your application.

Catalog #	Amtax Analyzer Model
57385-00	Amtax analyzer 0.5-12.0 mg/L, 115 VAC
57386-00	Amtax analyzer 5-120 mg/L, 115 VAC
57387-00	Amtax analyzer 50-1200 mg/L, 115 VAC
57385-01	Amtax analyzer 0.5-12.0 mg/L, 230 VAC
57386-01	Amtax analyzer 5-120 mg/L, 230 VAC
57387-01	Amtax analyzer 50-1200 mg/L, 230 VAC
Catalog #	Filtrax sample filtration system
57389-00	Filtrax system, 2 m unheated hose, 115 VAC
57390-00	Filtrax system, 10 m delivery hose, heated, 115 VAC

57391-00	Filtrax system, 20 m heated hose, 115 VAC
57389-01	Filtrax system, 2 m unheated hose, 230 VAC
57390-01	Filtrax system, 10 m heated hose, 230 VAC
57391-01	Filtrax system, 20 m heated hose, 230 VAC

Accessories

28307-00	Amtax reagent kit, 0.5-12.0 mg/L
28308-00	Amtax reagent kit, 5-120 mg/L
28309-00	Amtax reagent kit, 50-1200 mg/L
LZV-149	Amtax maintenance kit
LZX-667	Filtrax maintenance kit
57370-00	OptiQuant OPC Explorer CD-ROM
46964-00	Power cord, 115 VAC, 6ft.
47439-00	Power cord, 230 VAC, 6ft. Continental European plug
LZV-145	Kit to add second sample stream
LZV-146	Additional alarm relays for second sample stream

Typical Proposal Specification

The Ammonia Analyzer shall employ a colorimetric method of measurement. The analyzer shall adjust the pH of the sample such that the ammonium present in the sample is expelled as gaseous ammonia. The analyzer shall dissolve the ammonia gas in a liquid indicator and measure the resulting color change colorimetrically.

The analyzer power requirements shall be 100-230 VAC, 50/60 Hz. The analyzer shall be housed in an IP54 rated housing designed for wall or pipe mounting.

The analyzer measurement range shall be from 0.5 to 1200 mg/L in three intervals depending on reagents installed. The analyzer's operating temperature range shall be from 50° to 104° F. Repeatability shall be 2.5% of measured value or 0.2 mg/L, whichever is greater. The analyzer will calibrate automatically using an ammonia standard installed in the analyzer.

The system shall provide menu-driven configuration of measurement and control functions via front-panel-mounted touch-sensitive switches. Menus and measurement results shall be viewable on a back-lit liquid crystal display. Measurement shall be reportable via 0/4-20 mA outputs. In addition the system shall provide two alarm relays that can be configured to threshold values based on concentration.

The entire process monitoring system shall be designed to meet UL, CSA, and CE safety standards.

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