

PART 1 GENERAL

1.1 Section includes

- A. Analyzer for monitoring of ammonium in water.
- B. Includes the capability to remotely monitor sensors on any browser-enabled device and present diagnostics on the overall health of the measurements (on Predictive Diagnostics-enabled sensors), as well as upcoming and required maintenance - reducing user risk and downtime.

1.2 Measurement Procedures

- A. The method of measuring ammonium will be by gas selective electrode (GSE) that uses liquid to gas- phase conversion.
 - 1. Sample is mixed with sodium hydroxide that converts ammonium to ammonia which is expelled from the sample.
 - 2. The ammonia gas can pass the gas selective membrane.
 - 3. Ammonia changes the pH of the electrolyte and the electrode then measures the pH value and calculates the ammonium concentration.

1.3 Alternates

- A. Other instruments that do not use a GSE are not acceptable.
- B. Other instruments that do not have predictive diagnostic capabilities are unacceptable

1.4 System Description

- A. Performance Requirements
 - 1. Measurement range (depending on model):
 - a. 0.05 to 20 mg/L, or
 - b. 1 to 100 mg/L, or
 - c. 10 to 1000 mg/L
 - 2. Lower detection limit (depending on model):
 - a. 0.05 mg/L, or
 - b. 1 mg/L, or
 - c. 10 mg/L
 - 3. Accuracy (depending on model):
 - a. 3% \pm 0.05 mg/L, or
 - b. 3% \pm 1.0 mg/L, or
 - c. 4.5% \pm 10 mg/L
 - 4. Reproducibility (depending on model):
 - a. 2% \pm 0.05 mg/L, or
 - b. 2% \pm 1.0 mg/L, or
 - c. 2% \pm 10 mg/L
 - 5. Response time: Less than 5 minutes (T90) , including sample preparation (in combination with Hach Filterprobe sc)
 - 6. Measurement interval: 5 to 120 minutes, adjustable
- 1. When connected to a multi-parameter digital controller the overall status of the instrument performance is displayed as a percentage value via a measurement indicator
- 2. When connected to a multi-parameter digital controller the overall time remaining until maintenance tasks are due is displayed in days

1.5 Certifications

- A. CE conform. Listed to UL and CSA safety standards by TUV.

1.6 Environmental Requirements

A. Operational Criteria

1. Sample temperature: 4 to 40 °C (39 to 104 °F)
2. Sample pH: 5 to 9 pH
3. Operating temperature: -20 to 45 °C (-4 to 114 °F)
4. Operating humidity: 95% relative humidity, non condensing

1.7 Warranty

- A. The product includes a one-year warranty from date of shipment.

1.8 Maintenance Service

A. Scheduled maintenance

1. Replace stirrer arm: yearly
2. Replace valve pumps: yearly
3. Replace cylinder and piston: yearly

B. Unscheduled maintenance

1. Replace chemicals as required
2. Replace filter element, fan housing, filter element, and compressor as required

PART 2 PRODUCTS

2.1 Manufacturer

A. Hach Company, Loveland, CO

1. Model AMTAX sc Ammonium Analyzer

2.2 Manufactured Unit

A. The AMTAX sc Ammonium Analyzer consists of:

1. Housing: ASA UV-resistant, IP55-rated, lockable
2. Gas sensitive electrode
3. Colorimeter

2.3 Equipment

- A. The analyzer calibrates and cleans itself automatically.
- B. The required power supply is 230 Vac/50Hz or optional 115 Vac/50-60Hz connected to a Hach model sc1000 multi-parameter universal controller.
- C. Data transmission is made with a data cable with the controller.
- D. Outputs include relay, current outputs, and bus interface via the controller

2.4 Components

- A. Standard equipment:
 - 1. Analyzer
 - 2. Manual
 - 3. Reagents
- B. Dimensions: 21.3 x 28.3 x 15.4 inches (540 x 720 x 390 mm)
- C. Weight: 68 pounds (31 kg)

2.5 Accessories

- A. Hach Filterprobe sc
- B. Hach sc1000 multi-parameter universal controller
- C. Mounting kits (rail or stand)

PART 3 EXECUTION

3.1 Preparation

- A. Wall-mount indoors or outdoors.
- B. Rail- and stand-mounting options available.

3.2 Installation

- A. Contractor will install the sensor in strict accordance with the manufacturer's instructions and recommendation.
- B. Manufacturer's representative will include a half-day of start-up service by a factory-trained technician, if requested.
 - 1. Contractor will schedule a date and time for start-up.
 - 2. Contractor will require the following people to be present during the start-up procedure.
 - a. General contractor
 - b. Electrical contractor
 - c. Hach Company factory trained representative
 - d. Owner's personnel
 - e. Engineer

3.3 Manufacturer's Service and Start-Up

- B. Contractor will include the manufacturer's services to perform start-up on instrument to include basic operational training and certification of performance of the instrument.
- C. Contractor will include a manufacturer's Service Agreement that covers all the manufacturer's recommended preventative maintenance, regularly scheduled calibration and any necessary repairs beginning from the time of equipment startup through to end user acceptance / plant turnover and the first 12 months of end-user operation post turnover.
- D. Items A and B are to be performed by manufacturer's factory-trained service personnel. Field service and factory repair by personnel not employed by the manufacturer is not allowed.
- E. Use of manufacturer's service parts and reagents is required. Third-party parts and reagents are not approved for use.

END OF SECTION