PART 1 GENERAL

1.1 Section includes

1. Analyzer for monitoring of ammonium in water.
2. 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

1. Other instruments that do not use a GSE are not acceptable.
2. 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% ±0.05 mg/L, or b. 3% ±1.0 mg/L, or

c. 4.5% ±10 mg/L

4. Reproducibility (depending on model):

a. 2% ±0.05 mg/L, or b. 2% ±1.0 mg/L, or

c. 2% ±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

* 1. Manufacturer’s Service and Start-Up
     1. 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.
     2. 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.
     3. 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.
     4. Use of manufacturer’s service parts and reagents is required. Third-party parts and reagents are not approved for use.

END OF SECTION