



**TELEDYNE**  
ANALYTICAL INSTRUMENTS  
A Teledyne Technologies Company



(주)엠씨마스터스  
**MC Masters**  
Measurement & Control

# Model **LXT-220-NH4** Ammonium Analyzer

## FEATURES

- Ammonium ISE electrode
- K+, pH and Temp. electrodes
- Rugged PVC design
- Integral Spray Head Cleaner
- Internal Signal Conditioning

## BENEFITS

- Fast and Accurate Ammonium Measurement  $\text{NH}_4^+$  or  $\text{NH}_4^+-\text{N}$
- Fully compensated for pH, K+ interferences & Temperature
- Removable electrode guard for easy maintenance
- Clean sensor in situ with pressurized water or air
- Amplified signals allow up to 200 meters between Sensor and Analyzer



# LXT-220-NH4 Ammonium Analyzer

The LXT-220-NH4 Ammonium Analyzer measures the concentration of dissolved ammonium as nitrogen ( $\text{NH}_4 + \text{N}$ ) in water. The sensor uses three electrodes to determine the  $\text{NH}_4 + \text{N}$  concentration, an Ammonium Ion Electrode, a Potassium Ion Electrode and a pH Electrode. It is designed for use in all kinds of water. Typical applications include monitoring environmental waters, lakes, streams and wells as well as wastewater treatment in aeration basins and effluent.

The Ammonium Ion Electrode provides the primary measurement. Any potassium ion in the sample generates a positive interference in the measurement, due to its similar size and charge to the ammonium ion. A Potassium Ion Electrode measures the amount of potassium ion present in the sample and LXT-220 Analyzer subtracts the appropriate amount of signal from the Ammonium Measurement.

The Ammonium Ion Electrode only measures the ammonium ion ( $\text{NH}_4 +$ ) not ammonia ( $\text{NH}_3$ ). Ammonium ion and ammonia coexist in a pH dependent ratio in solution. The more acidic pH values favor the  $\text{NH}_4 +$  and the more basic values favor dissolved ammonia gas,  $\text{NH}_3$ . The pH Electrode measures the pH and the LXT-220 Analyzer calculates the total  $\text{NH}_4 + \text{N}$  concentration based on the pH vs.  $\text{NH}_4 +$  concentration

profile stored in the instrument. Temperature is also measured and used to compensate each of the three electrode measurements.

The LXT-220-NH4 Ammonium Analyzer is configured to periodically actuate a cleaning cycle using the integral spray cleaner in the sensor. This minimizes the formation biofilms or other coatings on the electrodes which keeps maintenance to a minimum. The period and duration of the cleaning cycles are user configurable. During the cleaning cycle the 4-20 mA output is held at either the last value or a preset value.

The rugged LXT-220-NH4 Sensor has 1 1/4" NPT rear facing threads for attaching an extension/immersion tube for easy installation from catwalks or handrails. The LXT-220-NH4 sensor is submersible with an IP68 degree of ingress protection. The LXT-220-NH4 sensor can not be supported by the cable and the cable must not be immersed in the water. A removable electrode guard facilitates easy electrode replacement when necessary. The LXT-220-NH4 sensor features internal signal conditioning that allows the sensor to be mounted up to 200 meters from the analyzer.

The LXT-220-NH4 Analyzer is also available in a  $\text{NO}_3 -$  Analyzer configuration.

## SPECIFICATIONS

### SENSOR

#### Sensor

Three Electrode system with spray cleaner, Ammonium ISE ( $\text{NH}_4 + \text{N}$ ) is the primary measurement. The Potassium ISE and pH glass electrodes are used to compensate the  $\text{NH}_4 +$  signal. The Sensor is waterproof with an ingress rating of IP 68.

#### Measurement Range

$\text{NH}_4 + \text{N}$ : 0.1 to 1000 ppm

#### Operating Temperature

0° C to 50° C (32° F to 122° F)

#### Min/Max Flow Rate

Minimum: 0.1 m/s  
Maximum: 3.0 m/s

#### Wetted Materials

PVC, PES, PVDF, PTFE, Viton, Glass, 316 SS

#### Accuracy

± 3% of reading, dependent on Calibration

#### Response Time

T90: 1 minute

#### Electrode Life

ISEs: 4- 6 months, typical  
pH electrode: 6-12 months, typical

### LXT-220

#### Measurements

Ammonium: 0.01 to 1000 ppm as  $\text{NH}_4 + \text{N}$   
Potassium: 0.01 to 1000 ppm pH: 0 to 14 pH  
Temperature: 0° C to 100° C (32° F to 212° F)

#### Compensation

pH: 4 - 10 pH  
Potassium: 0.1 to 1000 ppm

#### Display

2.5" X 1.75" backlit LCD, 4 lines of Text & Graphical

#### Enclosure

NEMA 4X, LxWxD: 5.7" x 5.7" x 7

#### Outputs

(2) 4-20 mA maximum load 800 ohms @ 24 VDC  
Configured: 0.1 to 20 mg/l  $\text{NH}_4 + \text{N}$   
0 - 14 pH  
Optionally up to (4) 4-20 mA outputs\*

#### Input Power

110/220 VAC @ 50/60 Hz

#### Alarm Relay Ra'ngs

(2) SPDT 230 VAC/5A or 30 VDC/5A resistive max.  
Relay(1) Spray Cleaner, Relay(2) Alarm  
Optionally up to (8) Relays\*



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### Warranty

Instrument is warranted for one year against defects in material or workmanship

**NOTE:** Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

