

Instran™ Analyzer

Free Ammonia (NH₃)

Water analytics built for sustainable, accurate control of the water and wastewater treatment processes.

The Instran™ free ammonia analyzer provides rapid, real-time, multi-stream reliable analysis of free ammonia (NH₃) in both drinking water and wastewater treatment plants. The online analyzer features a robust and stable design that is capable of maintaining its sensitivity and calibrated status for an unlimited timeframe while operating reliably regardless of sample matrix conditions.

The analyzer is backed by Aqua Metrology Systems' technical support service that ensures minimum time-to-repair and maximum uptime that result in high data availability for mission critical applications.

Instran™ Applications

The Instran free ammonia online analyzer provides rapid, high frequency real-time data on NH₃ levels in nine minutes with sensitivity down to 0.01 ppm. The benefits of using the analyzer include:

- Provide an accurate process variable for control of ammonia injection for monochloramines applications.
- Provide an accurate process variable for control of ammonia levels in the aeration basin for nitrification/denitrification of wastewater.
- Obtain baseline operational data on influent and effluent levels.
- Monitor critical process steps to aid in process control and optimization.

Instran™ Features

Automated online operation

- Eliminates operator variability
- Measurement time approximately 9 minutes
- Automatically calibrated with onboard standard
- Optional one or two sample streams
- Flexible online scheduling
- Manual grab sample
- 4-20 mA outputs, and MODBUS-RTU (RS485) output and control

Comprehensive data acquisition

- Programmable contact closure for local alarm
- Easy-to-use front panel HMI
- Programmable on-board data acquisition

Data quality assurance program

- Optional SafeGuard™ Sentinel module with cellular connectivity
- Secure Google Cloud access to data files (results, calibrations, alarms and events)
- Email notifications of alarms and events
- Download historical data via USB memory stick



Instran™ Specifications

PERFORMANCE

Method - Detector	Ion Selective electrode (ISE), Standard Known Addition
Range	0 to 10 ppm; 0 to 500 ppm (configurable for other ranges)
Resolution	1% of calibration standard
Analysis Time	9 minutes to result, 11 minutes throughput
Sample Stream Supported	Standard configuration: 1 or 2 streams
Sample Requirements	Temperature: 10-30 °C Pressure: 10-60 psi Flow rate: 100 mL/min
Sampling Scheme	Syringe dispensing system; Fast loop sampling system, which ensures that the syringe never touches the sample or reagents.

SYSTEM

User Interface	Keypad with 4 keys and 4 indication LEDs. Configurable menus in several languages
Display	Backlit Monochrome – 8 lines x 20 characters, backlit graphic and widescreen, color optional
Relays	Four relays with three contacts (C, NO, NC), potential free and assignable per program
Calibration	Automatic and scheduled, automatic on-demand
Reactor	Small volume reaction cuvette (17 mL). Drain solenoid valve with large passage section (3 mm)
Memory	Microprocessor with internal program (firmware) upgradable via Micro SD
Communications	Two 4-20 mA analog outputs, separately configurable, and galvanically isolated. One MODBUS-RTU RS-485 two-wire bus connection, for output and control.
Fluidics System	Tubing made of inert materials. Teflon tube in the loop. Tygon 2375 tube (reagent resistant)
Sample Inlet	Fast external loop with built-in filter. Inlet: 3/8" tube. Atmospheric drain. Inlet fitting for 3/8" hose
Environmental Conditions	Ambient temperature: 5-30 °C
Dimensions – Instrument Board only	H 25.5", W 16", D 5" (H 64.8 cm, W 40.6 cm, D 12.7 cm)

OPTIONS

Configuration	Online or Manual (Grab Sample) mode
Weatherproof Enclosure	NEMA 4X system enclosure
Sample Preparation	Filter system
Data Quality Assurance Program	SafeGuard™ Sentinel module with connection to internet (cellular) and Instran MODBUS-RTU output

* Note - specifications are subject to change without notification.