

W3107 Ammonia On-Line Analyzer

Wet Chemistry Analyzer with Colorimetric Detection of Ammonia concentration in water.



Product Features

- Based on a 24-bit high resolution A/D converter
- Automatic sampling analysis and auto-calibration
- Measuring cycle time adjustable
- Wet chemistry method with syringe transmission
- Quantitative syringe system for precise dosing
- Sampling valve can resist high temperature, corrosion, acid and alkaline
- Self-diagnosis & friendly calibration setting
- User friendly graphical interface
- Highly stable and accurate with wide measuring range
- 7" LCD color touch panel display
- Reagents free and cost saving
- Simultaneously display parameters of Ammonia and analysis cycle time
- Language support in English and Chinese
- Automatic data storage with capacity up to 5000 historical records. (User could expend memory by using 32GB/64GB flash disk.)
- Automatic alarm of a shortage of liquid chemical replenishment dosing

Application

Ammonia (NH_3) is characterized by its distinct urine smell and also a toxic waste produced from living organisms. It is recognized as a lethal substance in biological system. Ammonia dissolves easily in water and it leads producing NH_4OH . If water contains over 1.5ppm within Ammonia concentration in drinking water, it will result in certain levels of illness. Natural Ammonia content in water usually comes from biological decay of animals or plants. But the major Ammonia pollution is from industrial wastes, particularly the petroleum refineries.

Ammonia in the solution is detected by its nitrogen content, so called "Ammonia nitrogen" ($\text{NH}_3\text{-N}$). W3107 Ammonia on-line analyzer uses salicylate method to accurately determine Ammonia concentration in the solution.

Operational Principle

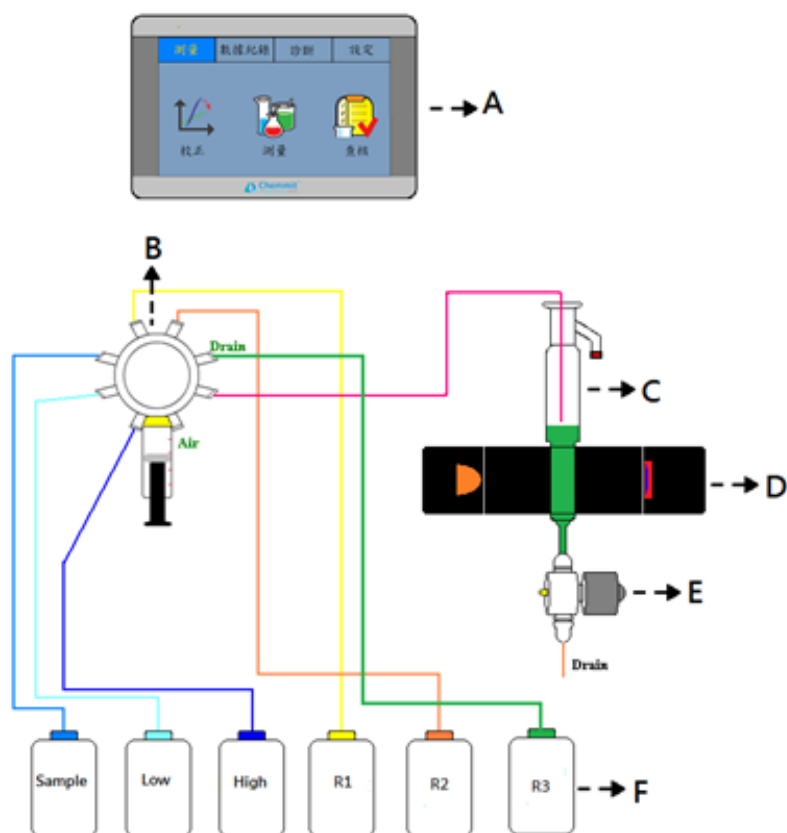
Ammonia reacts with salicylate and hypochloride ions and it produces light green solution which is in direct proportion to the concentration of Ammonia ion. Ammonia values can be presented directly on the analyzer.

To avoid interferences, W3107 uses a stabilizer to enhance the accuracy and precision of results. Automatic pumping extracts accurate sampling and reagents, herewith sample and reagent can be mixed at precious rate.

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Analysis Diagram



A: control Unit

B: quantitative Syringe dosing module

C: optical reaction tube

D: optical module

E: drain valve

F: Reagents

Main Feature & Function

Symbol	Component Name	Function & Description
A	Control Unit	<ul style="list-style-type: none"> A monitor of ammonia concentration, user friendly graphical interface with 7" LCD color touch panel display.
B	Quantitative syringe dosing module	<ul style="list-style-type: none"> Syringe & pump: precise control of reagent dosing volume. Use stepper motor to control 2.5ml into 3,000 steps. Eight-port valve: to achieve different fluid delivery with the same positioner unit, maximizing flexibility and value.
C · D	Optical Module	<ul style="list-style-type: none"> Special LED, dual beams, auto gaining design. PID light source control can ensure light source output stability and sustain LED long life span. High resolution sensing device can support the detection even with a very weak light source.
F	Reduction of Reagent	<ul style="list-style-type: none"> The system software is integrated with a quantitative syringe dosing module, which will only require a minimum use of reaction reagent. This benefit can save money. Our analyzer uses environmental friendly reagent, in order to prevent from second environmental pollution.

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General Specifications

Function	Wet Chemistry Analyzer for Measurement of Concentration of Ammonia (NH ₃ -N) in Water, following the Colorimetric Detection via the Salicylate Method, according to NIEA W456.51 and US EPA 350.1C
Model	W3107
Installation	Freestanding Type
Protection Class	IP65
Dimensions	H1250* W550* D430mm
Range	0-2 mg/L , 0-10 mg/L, 0-100 mg/L, to 0-500 mg /L
Accuracy	F.S ±3 %
Repeatability	F.S ±3 %
Optical Module	Special LED, dual beams, auto gaining design, 24 bit high resolution A/D converter, long life span, auto compensation of light intensity, and with system automatic light source abnormal judgment.
Response Time	Standard concentration range: 20 minutes per measurement High concentration range: 30 minutes per measurement
Measuring Cycle Time	User selectable 0 to 1,000 minutes per measuring cycle
Auto Cleaning	User selectable 1 to 3 times. Every time lasts for 15 minutes
Auto Calibration	Automatic calibration. Can switch to manual calibration, high- and low- point.
Shutdown Alarm	<ul style="list-style-type: none">· Concentration abnormal alarm (adjustable of high-point)· System error alarm
Display	7" LCD color touch panel display
Self-Diagnosis	The system is continuously self-diagnosis. The error management helps to identify problems. (Display errors and save historical data)
Electrical Conditions	Power supply ranges:115 / 230 VAC, 50 / 60 Hz · < 500 Watt
Certification	CE Mark (Certificate No. 3X180605.KSIUN08)
Language Support	Chinese, English
Sample Conditions	<ul style="list-style-type: none">▪ Sample temperature: 0 to 45 °C▪ Sample flow: Continuous, 50 to 1,000 ml/min▪ Sample consumption: 10ml/ analysis nominal▪ Sample connection: use external pump connect with 4.75mm Teflon tube▪ Suspended solids: 200 micron or less
Environmental Conditions	<ul style="list-style-type: none">▪ Ambient operating temperature: 0 – 60 °C▪ Ambient operating humidity: Up to 95 % RH non-condensing
Analog Outputs	1x isolated current output, 4-20mA range. With option of RS485
Relay Outputs	1x alarm reply. With option of extending up to 4 fully user-assignable relays