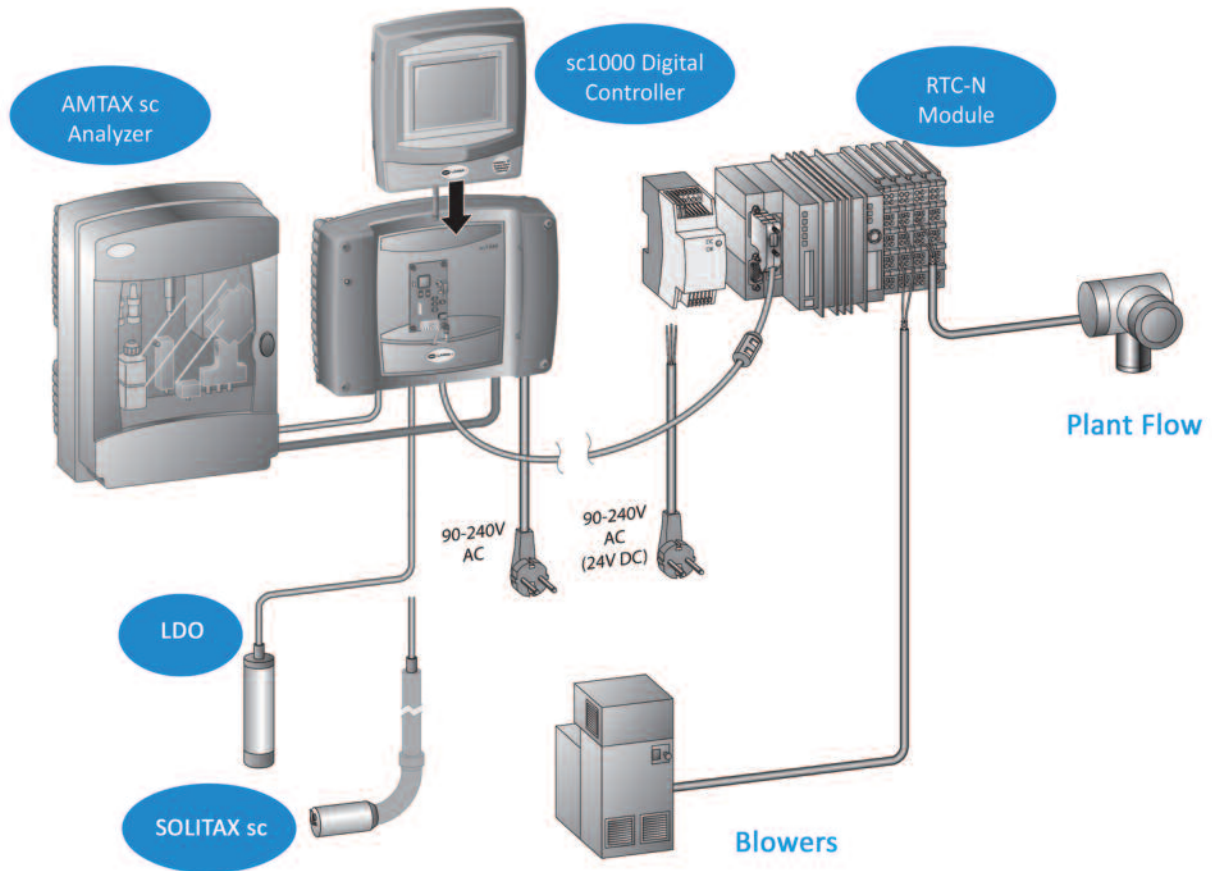


RTC103-N MODULE REAL-TIME NITRIFICATION CONTROL SOLUTION

Applications

- Wastewater
- Industrial Water



Nitrification. Under Control.

Hach's off-the-shelf RTC-N System adjusts the process of nitrification in real time, helping you meet ammonia limits while reducing money spent on excessive and unnecessary aeration.

Maintain Compliance

Adjusting aeration based on real-time data makes your process more consistent. The RTC-N system continually monitors ammonia levels in your water and responds automatically to load changes, keeping your facility compliant. Controlling your process has never been so simple.

An Off-the-Shelf System

RTC is a plug-and-play system that is ready to use after a very simple set up. Minimal downtime is needed to install the system, and once installed, Hach will help you configure your setpoints so you are fully prepared to monitor and treat your water in real time.

Save Money on Treatment

The RTC-N module is preprogrammed with algorithms that calculate the exact DO required for your aeration system. By treating only when needed, you save on energy costs.

When We Say Service, We Mean Service!

Hach's complete Service package includes routine maintenance visits and warranty repairs. A team of remote technical experts will monitor your system and send you reports so you know your system is working properly. It's like having a Hach Technician at your facility.

Specifications*

AMTAX sc

Measurement Method	GSE (Gas Sensitive Electrode) with screw-on membrane cap
Measurement Range	(NH ₄ -N) 0.05 to 20 mg/L
Accuracy	3% ±0.05 mg/L
Reproducibility	2% ±0.05 mg/L
Response time (T90)	Less than 5 minutes, including sample preparation
Measurement Interval	5 to 120 minutes, adjustable
Power Supply	230 Vac/50Hz or optional 115 Vac/50-60Hz; connected to sc200 or sc1000 Multi-parameter Universal Controller
Dimensions	540 x 720 x 390 mm (21.3 x 28.3 x 15.4 in.)
Weight	35 kg (77 lbs.) including reagents

SOLITAX sc

Measuring Range	0.001 mg/L to 50 g/L (SS), 0.001 to 4000 NTU (Turbidity)
Accuracy	Turbidity up to 1000 FNU/NTU
Without Calibration	<5% of the measured value ±0.01 FNU/NTU
With Calibration	<1% of the measured value ±0.01 FNU/NTU
Repeatability	Defined according to ISO/WD 13530. Turbidity Less than 1% of reading Suspended Solids Less than 3% of reading (depends on the homogeneity of municipal activated sludge)
Response Time	1 s < T90 < 300 s (adjustable)
Dimensions	Immersion sensor: 60 x 200 mm (2.4 x 7.9 in.)
Weight	Immersion, stainless steel: 1.38 kg (3.0 lb.)

LDO2

Measuring Range	0 - 20.00 ppm / 0 - 20.0 mg/L/ 0 - 200% saturation
Accuracy	±0.1 ppm Below 5 ppm / ±0.2 ppm Above 5 ppm
Response Time at 20°C	To 95% in less than 60 seconds / To 90% in less than 40 seconds
Resolution	0.01 ppm (mg/L) / 0.1% saturation
Repeatability	±0.1 ppm (mg/L)
Dimensions (D x L)	1.95 in x 10.05 in (49.53 mm x 255.27 mm)
Weight	2.2 lbs. (1 kg)

sc1000

Power Requirements	100 to 230 Vac, 50/60 Hz Power: 75 W Optional: 24 Vdc
Relays	Up to four SPDT, user-configurable contacts rated 100 to 230 Vac, 5 Amp resistive maximum, per probe module. Additional relays are available with additional probe modules.
Inputs	Up to 12 analog 0-20 mA, maximum impedance 500 Ohms per probe module.
Outputs	Up to 12 analog 0/4-20 mA, maximum impedance 500 Ohms per probe module.
Control	PID, high/low phasing, setpoint, deadband, overfeed timer, off delay, and on delay
Alarms	Low alarm point, low alarm point deadband, high alarm point, high alarm point deadband, off delay, and on delay
Mounting Configurations	Surface, panel, and pipe (horizontal and vertical)
Dimensions	Probe module with attached display module: 315 x 250 x 142 mm (12.4 x 9.8 x 5.6 in.)
Weight	Approximately 6.5 kg (14.3 lbs.) depending on configuration
Certifications	North American Certifications: cTUVus to UL 61010A-1 and CSA C22.2 No. 1010.1 FCC ID QIPMC56 / IC ID 267W-MC56

Continued on the next page.

Specifications* continued

FILTRAX

Sample Flow	Approx. 900 mL/h for up to three process instruments
Sample Temperature	41 to 104°F (5 to 40°C)
Power Supply	115 or 230 Vac \pm 10% AC, 50/60 Hz
Certification	CE, UL, CSA
Weight (approximate)	Control Unit: 49 lb. (kg) Module Holder with 5-m Suction Tube: 20 lb. (9 kg) Sample Tube, 33-ft. (5-m): 11 lb. (5 kg) Sample Tube, 66-ft. (20-m): 22 lb. (10 kg) Mounting pipe, 6.6-ft. (2-m): 11 lb. (5 kg)
Dimensions (approximate)	Control Unit: 17 x 21 x 9 in. (430 x 530 x 220 mm) Module Holder: 4 x 20 x 13 in. (92 x 500 x 340 mm)

RTC103 N-Module

Processor	Pentium®†, MMX compatible, 500 MHz clock rate
Analog Input	4–20 mA
Analog Output	4–20 mA
Dimensions	6.5 in. x 4.72 in. x 3.78 in.
Weight (approximate)	0.9 kg

*Subject to change without notice.

†Pentium is a registered trademark of the Intel Corporation.

Principle of Operation

The RTC103 N Module (Real-Time Controller for Nitrification) optimizes nitrification processes in wastewater treatment plants that are continuously aerated (e.g. plug flow nitrification tanks or pre-denitrification).

The RTC103 N Module consists of an open-loop controller, based on NH₄-N influent concentration, flow rate, mixed liquor, suspended solids and temperature. Based on that information, a DO set-point is calculated and required to reach the desired NH₄-N set-point at the effluent of the aeration tank.

In addition to open-loop control, there is a closed-loop PID-based control on the NH₄-N concentration at the end of the nitrification zone that is applied to improve control performance. The PID-output values are combined with the open-loop output to calculate the required DO set point.

Ordering Information

- NRTC1C** Real Time Nitrification Control System for 1-Channel
Includes RTC103 N-Module, AMTAX sc, Filtrax, SOLITAX, and sc1000
with 6-sensor probe module and display
- NRTC2C** Real Time Nitrification Control System for 2-Channel
Includes RTC103 N-Module, AMTAX sc, Filtrax, SOLITAX, and sc1000
with 6-sensor probe module and display

Service Plan

- FSPN-RTC** Field Service Partnership for Nitrification Control System
(Covers RTC103 N-Module, AMTAX sc, Filtrax, SOLITAX sc and sc1000)
Includes instrument support that covers all parts, labor and travel for
on-site repairs, factory recommended calibrations and maintenance
(including required parts). Reagents are not included.



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