

WASTEWATER NITRATE AND PHOSPHORUS

CAPABILITIES

Continuous, On-Line,
Automatic Monitoring
One or Two Sample Lines

Two Parameter Analysis

Analog, Serial or MODBUS
Output Capabilities

Multiple Alarms (Optional)

Continual Self Diagnostics
with Alarm

PARAMETERS

Nitrate and Ortho
Phosphate

APPLICATIONS

Municipal Wastewater
- Process (with filtration)
- Effluent (without filter)

Industrial Wastewater

Sample handling and
conditioning accessories
are available for this and
other ChemScan Analyzers.

- In Situ Cyclic Filters
- Flow Through Cyclic Filters

FEATURES

Multiple Wavelength UV
Absorbance Detection System

Internal Multiple Sample
Line Manifold

Automatic Zero and Clean

Internal Data Logs

Benign, Inexpensive
Reagents

No Ion Specific Electrodes
to Clean or Replace

Simple to Use
and Maintain

BENEFITS

A ChemScan On-Line Analyzer
can automatically provide
operators with timely process
chemistry measurements,
without the need for frequent
manual sampling or laboratory
analysis. These measurements
can be used to:

Assure Process
Conformance

Control Energy and
Chemical Costs

Improve Process
Performance



*For On-Line
and Real-Time
Wastewater Analysis*

ChemScan®
An  In-Situ Brand

"Monitoring a World of Water"

ChemScan® UV-2150/NoP Series Technical Specification

FUNCTIONS AND OUTPUTS

| | |
|------------------------|--|
| Measurement Principle | High Resolution, Ultraviolet Absorbance |
| Detector | 256 Element Array |
| Spectral Range | 200 - 450 nm |
| Calibration Technique | Pattern Recognition of Spectral Data |
| Number of Parameters | Nitrate and Ortho-Phosphate |
| Parameter Options | Primary or Secondary Absorbance |
| Data Communications | 4-20mA (4 outputs per sample line max.), RS-232, others optional |
| Data Log | 750 Values Time / Date Stamped, 24 Calibration Spectra |
| Auto Zeroing | YES (Standard) |
| Auto Cleaning | YES (Standard) |
| Analyzer Pump | YES (Standard) Zeroing, Cleaning and Internal Sample Flow Only |
| Reagent Addition | YES (Standard), Direct Reagent Injection |
| Number of Sample Lines | 1 or 2 through Internal Manifold |

PERFORMANCE SPECIFICATIONS²

| | |
|------------------|--|
| Reading Interval | 3 to 9999 minutes |
| Response Time | Parameter Dependent (3-5 min. typ.) |
| Range | Parameter/Site Dependent |
| Accuracy | Parameter/Site Dependent Typ. 2% to 5% of Range |
| Precision | Parameter/Site Dependent Typ. 2% of Range |
| Zero Drift | Parameter Dependent Minimized with Auto Zero |

SAMPLE PARAMETERS

| | |
|-------------------------|--|
| Sample Pressure | Pressurized Sample Lines Std. Regulated to 34-69 Kpa (5-10 psi), (10 psi Fixed Pressure Regulators Provided) (Unpressurized Optional) |
| Sample Flow | 0.5 to 5.0 l/min. 1.5 L flush per sample (0.13 to 1.32 gpm – 0.4 gallon flush) |
| Filtration Requirement | NONE (For samples meeting turbidity and solids requirements) |
| Strainer Requirement | #20 Mesh - Opening of 0.69 mm (0.027 inches) provided |
| Sample Temperature | 1 ^o - 60 ^o C (34 – 140 ^o F) |
| Sample Turbidity | 0 - 60 NTU (Standard) |
| Sample Suspended Solids | 0 - 150 mg/l TSS |

MAINTENANCE

| | |
|----------------------------------|-------------------------------|
| Light Source Replacement | Every 4 years |
| Internal Battery Replacement | Every 2 years |
| Zero & Cleaning Solutions Refill | As Required (4 weeks typical) |
| Reagents Refill | As Required (4 weeks typical) |

INSTRUMENT SPECIFICATIONS

| | |
|---------------------------|---|
| Size | 102 x 51 x 26 cm (40 x 20 x 10 inches) |
| Weight | 59 kg (130 lbs) |
| Mounting | Wall (Standard) or Stand (Optional) |
| Finish Coating / Material | Polyurethane Enamel over Polyester Urethane on Steel (Standard) or Type 316 Stainless Steel (Optional) |
| Power | 120 VAC ±10%, 50-60 Hz, 4 Amps maximum |
| Power Connection | Hard Wired (Standard) or Plug (Optional) |
| Power Condition | Dedicated Branch Circuit Free From: Surges/Dips > 10%, RF and Switching Noise |
| Operator Interface | 2 x 20 LCD and 4 x 4 Keypad |
| Sample Cell Material | Polymer Body with Quartz Windows |
| Sample Connection | ¼" FNPT Fitting |
| Waste Connection | ¼" FNPT Fitting (Open Drain Required) |

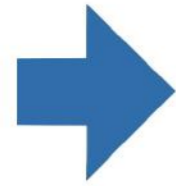
OPERATING ENVIRONMENT

| | |
|---------------------|--|
| Enclosure Ratings | Upper Enclosure: NEMA 4 (NEMA 4X Optional, 316 SS) Lower Enclosure NEMA 3R(Optional, 316 SS) (shielded spill drain) |
| Ambient Temperature | 5 ^o - 35 ^o C (41 – 95 ^o F) |
| Relative Humidity | 0 - 100% (Non-Condensing) For installation in an indoor or sheltered location |

Notes:

1. Technical Specifications are subject to change without prior notice.
2. All performance specifications are based on analysis of water standards under factory conditions.
3. Accessory items including filters are available for high turbidity / high solids applications

Data Communication Options



Electronic Interface Enclosure

Analog

Serial

Ethernet IP

CIM

Customer Interface Module



Features a Max. of Eight 4-20 mA Outputs, Alarms and Input

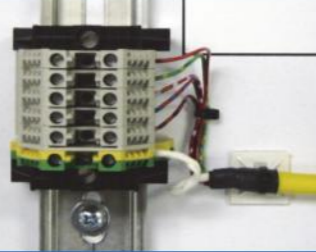
PLC

Programmable Logic Controller



For use when 4-20 mA Outputs are greater than eight

RS-232 Modbus RTU



Direct from Analyzer to Terminal Block in EIE

SUB-D RS-232 terminal for temporary laptop connection available in lower enclosure

RS-422/485 Converter



See Factory for Limitations

Modbus TCP/IP



AB Ethernet IP (Allen Bradley)



Typically used when connecting to Allen-Bradley Plant System

ChemScan[®] Accessories

Sample Handling Options & Data Communication



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ChemScan.com

Contact Your Local Representative for Additional Information:



www.ChemScan.com



Wastewater Filter Options

Typical applications:
 - aeration basins
 - SBR
 (sequenced batch reactors)

External Filter Required
 TSS is greater than 150 mg/L
 NTU is greater than 60

No Filter Needed
 TSS is less than 150 mg/L
 NTU is less than 60

In-Situ Cyclic Filter (In-Tank Wand)



Run is less than 50 ft
 Lift is less than 10 ft

Maximum of Four Filters/
 Sample Lines per Analyzer

No external pump required

* SBR Applications Require
 Pivoting Wand Mount -
 Std. Wand is Fixed Angle

Freeze protected (Heat
 Traced option available)

Flow-Through Cyclic (FTC) Filter



Run less than 500 ft



Maximum of Four Filters
 Per Analyzer

External Pump(s)
 Required
 - Provided by ASA
 or Others

10-20 GPM

Cross-Flow Filter



Run is less than 1500 ft.

Maximum of 8 Sample
 Points Per Filter System

External Pump(s)
 Required
 - Provided by ASA
 Alternative: Valves and
 Single Central Pump

30 GPM Minimum

Sample Circulation Chamber (SCC)

For coarse screening. Algae screening protects analyzer inlet screens and reduces maintenance. Typical applications include post secondary clarifier.

TSS is less than 150 mg/L,
 NTU is less than 60

Run is greater than 20 ft
 Lift is greater than 5 ft

Maximum of Eight Sample Lines

External Pump(s) Required

- Provided by ASA or Others
 - 3 - 10 GPM



Sample Extraction Accessory

For use with the ChemScan mini analyzer. Provides a pressurized sample.

TSS is less than 150 mg/L,
 NTU is less than 60

(Includes Pump and
 Sample Circulation
 Loop Assembly)



Legend

- TSS - Total Suspended Solids
- NTU - Nephelometric Turbidity Units
- GPM - Gallons Per Minute
- Run - Horizontal Distance to Sample Point
- Lift - Vertical Distance to Sample Point

Other Accessories

Heat Traced Cyclic Sample Line

Flexible conduit prevents freezing and damage to sample line. An option for any cyclic wand application.



Outdoor Enclosure

Providing a stable environment for the ChemScan mini along with the ability to locate the analyzer near the sample site.

Filter Wand with Disposable Cartridge

Simple design, no cleaning air, water or chemicals required. Inexpensive operational cost.



Sample Circulation Pumps

Light Duty, Submersible Pump
 1.3" Max. Dia. Solids
 Weight: 20 - 30 lbs
 Power: 1/4 - 3/4 HP, 120 VAC 60 Hz
 Power Cable: 20 feet
 12 foot SS support cable



Heavy Duty, High Head, Submersible, Grinder Pump. Cast Iron Construction.
 Weight: 70 lbs
 Power: 2.3 HP 230 or 460 VAC
 Power Cable: 30 feet
 Mounting: Dual guide bars
 Note: Guide bars are typically provided by others