

ChemScan®

PROCESS ANALYZERS

UV-4100

CAPABILITIES

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

Up to Four Parameters

Multiple Detection Ranges

Analog, Serial or Modbus
RTU Output Capabilities

Up to Eight Concentration
Set Point Alarms

Continual Self Diagnostics
with Alarm

PARAMETERS

Ammonia (dissolved)
Phosphorus (Ortho)
Chlorine (Free, Total)
Nitrate - Nitrite - %
Transmittance

APPLICATIONS

Municipal Potable Water
- Chloramination

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

Industrial Wastewater

FEATURES

Multiple Wavelength UV
Absorbance Detection System

Integrated 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
Operator Interface

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 Water and
Wastewater Analysis*

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

ChemScan®
An  In-Situ Brand

"Monitoring a World of Water"

REPRESENTED BY:

CCLYNCH
& ASSOCIATES

The Water Monitoring People

Phone: 1-800-333-2252

Fax: 228-452-2563

info@cclynch.com

www.cclynch.com

ChemScan® UV-4100 Series
TECHNICAL SPECIFICATION

FUNCTIONS AND OUTPUTS

Measurement Principle	High Resolution, Ultraviolet Absorbance
Number of Wavelengths	256
Spectral Range	200 - 450 nm
Calibration Technique	Pattern Recognition of Spectral Data
Number of Parameters	4 max.
Parameter Options	Primary or Secondary Absorbance (See Table 1 or 2)
Data Communications	4 - 20mA (8 outputs max.), RS-232, other formats optional
Data Log	1000 Values Time/Date Stamped, 24 Calibration Spectra
Auto Zeroing	YES (Std)
Auto Cleaning	YES (Std)
Analyzer Pump	YES (Std), Zeroing, Cleaning and Internal Sample Flow Only
Sample Conditioning	YES (Opt), Direct Injection
Number of Sample Lines	1 to 2 thru Internal Manifold

PERFORMANCE SPECIFICATIONS

Reading Interval	3 - 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 must be regulated to 10 psi maximum, with max. lift 5 ft. and max. run 20 ft. to sample location or line
connection	
Sample Flow	0.5 to 5 l/min. (1.5 l flush/sampling)
Filtration Requirement	NONE (For samples meeting turbidity and solids requirements), Optional ultrafilter available for high solids or turbidity.
Strainer Requirement	Mesh Opening of 2.0 mm Max.
Sample Temperature	1° - 60°C (Std)
Sample Turbidity	0 - 60 NTU (Max)
Sample Suspended Solids	0 - 150 mg/l (Max)

MAINTENANCE

Light Source Replacement	Every 5 years
Internal Battery Replacement	Every 2 years
Zero/Clean Solution Refill	As Required (2-4 weeks typ.)
Reagent Refill	As Required (2-4 weeks typ.)

INSTRUMENT SPECIFICATIONS

Size	40 x 20 x 10 in.
Weight	130 lbs.
Mounting	Wall (Std) or Stand (Opt)
Finish Coating	Baked Enamel on Steel (Std) or Stainless Steel (Opt)
Power	120 VAC ±10%, 50-60 Hz, 10 Amps max.
Power Connection	Hard Wired (Std) or Plug (Opt)
Power Condition	Dedicated Branch Circuit Free From: Surges/Dips > 10%, RF and

Operator Interface	Switching Noise
Sample Cell Material	2 x 20 LCD and 4 x 4 Keypad
Sample Connection	Polymer Body with Quartz Windows
Waste Connection	¼" FNPT Fitting
	¼" FNPT Fitting (Open Drain Required)

OPERATING ENVIRONMENT

Enclosure Ratings	NEMA 4 (Main Enclosure) NEMA 3R (Optrode Enclosure)
Ambient Temperature	5° - 35°C (Std)
Relative Humidity	0 - 100% (Non-Condensing)

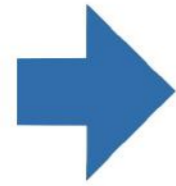
Option	NO ₃	NO ₂	NH ₃	PO ₄	%T or AU	Sample Lines	Outputs
1	X	X	X		X	1	4
2	X	X	X	X		1	4
3	X		X	X	X	1	4
4	X	X	X		X	2	8
5	X	X	X	X		2	8
6	X		X	X	X	2	8
7	X		X			1	2
8	X		X			2	4
9	X	X	X			2	6

Option	Free NH ₃	Free Cl ₂	Monochloramine	Total Cl ₂	Sample Lines	Outputs
10	X			X	1	2
11	X		X		1	2
12	X		X	X	1	3
13	X		X		1 plus 1	2 plus 1
14	X	X			1 plus 1	1 plus 1
15	X			X	2	4
16	X		X		2	4
17	X		X	X	2	6

Notes:

1. Technical Specifications are subject to change without prior notice.

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

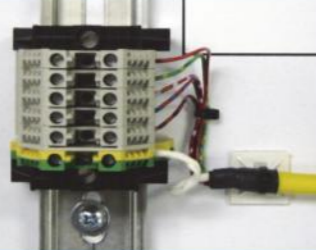
PLC

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



ChemScan, Inc.
2325 Parklawn Drive, Suite I
Waukesha, WI 53186
Phone 262-717-9500
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