

pH/ORP: Differential Sensors, 1-1/2 inch

Regenerateable Encapsulated LCP or Ryton® Differential pH and ORP Sensors—ideal for aggressive applications.

- *Unsurpassed accuracy and reliability with differential measurement technique—three electrodes instead of the normal two in conventional pH sensors*
- *Greater reliability resulting in less downtime and maintenance*
- *Built-in preamp or two-wire transmitter*
- *Versatile mounting styles*
- *3,000 ft. (914 m) transmission distance*
- *Also available with flat glass electrodes*

Complete Encapsulation

Complete encapsulated construction protects the sensor's built-in electronics from moisture and humidity problems, extending the working life of the sensor.

Built-in Preamp or Two-wire Transmitter

The built-in preamp produces a strong signal, enabling you to locate the analyzer up to 3000 ft. (914 m) from the sensor. An optional built-in two-wire transmitter is available for applications requiring a 4-20 mA sensor signal. This option requires that the indicating instrument of the measuring system be capable of providing 24 Vdc to power the sensor, and have adjustment means to calibrate for zero offset and span.

Versatile Mounting Styles

Threads are provided on both ends of the convertible mounting style sensor for either mounting into a pipe tee or attaching to the end of a pipe for immersion. The convertible style enables you to consolidate inventory, and thereby reduce associated costs. A union-mount style sensor and mounting tee are also available to conveniently install and remove the sensor for in-line service.

LCP Sensor

Chemically-resistant LCP Body

The exceptional chemical resistance and mechanical strength of the LCP (liquid crystal polymer) sensor body makes it ideal for most applications. These sensors can be used in aggressive process solutions such as acids, bases, alcohols, hydrocarbons, aromatics, chlorinated hydrocarbons, esters, ketones, and most other chemicals.

Low Heat Distortion

LCP sensors are physically stable and will not expand or contract when subjected to the heating and cooling cycles of a process. Furthermore, these sensors may be installed in metal fittings without fear of leakage, normally a problem when dissimilar materials are threaded together.

Ryton® Sensor

Excellent, Strong Base Chemical Compatibility

The Ryton sensor is best suited for measuring strong base solutions of more than 12 pH at elevated temperatures. It can also be used in acidic solutions, but is not recommended when aromatic hydrocarbons are present.

See next page for ordering information.



These field-proven differential electrodes are available in LCP (foreground) or Ryton® body materials. They provide greater reliability and reduced maintenance.



*Platinum ORP
(Gold ORP also available)*



Antimony Sensor

Primary Applications

- Drinking Water
- Wastewater
- Industrial Water
- Environmental

Specifications*

Measuring Range
pH: 0 to 14 pH
ORP: -2000 to +2000 mV

Temperature Range
-5 to 95°C (23 to 203°F)

Max. Pressure
100 psig

Sensitivity
pH: < 0.005 pH
ORP: < 0.5 mV

Wetted Materials
LCP body, PVDF junction, Viton O-rings, glass electrode, and titanium ground rod

Weight
~1.3 lbs. (0.6 kg)

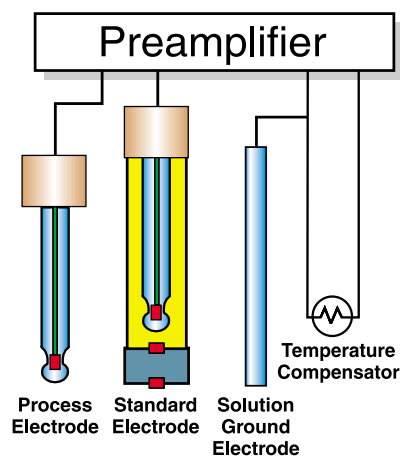
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pH/ORP: Differential Sensors, 1-1/2 inch



The Differential Sensor, with its built-in preamplifier, boosts the high impedance mV signals of the electrodes, providing a strong signal which can be transmitted up to 3,000 feet.

Principal of Operation

Hach's unique Differential Sensor Technology uses three measuring electrodes instead of the two in conventional pH sensors. The process electrode and standard electrode measure the pH differentially with respect to a third ground electrode.

This technique is proven to provide unsurpassed accuracy, reduce reference junction fouling, and virtually eliminate ground loops. The benefit is greater reliability with less downtime and maintenance.

Differential Sensor Warranty

Hach Company offers the best sensor warranty in the industry on its Differential Sensors. We will replace any Differential Sensor that fails due to defects in materials or workmanship within one year from the date of shipment—and up to 30 months on a prorated basis for any failure.



By replacing the salt bridge and standard cell solution, Hach Differential Sensors can be regenerated for repeated use. For salt bridges and standard cell solution, see page 444.

Popular pH/ORP Differential Sensor, 1-1/2 inch models

Prod. No.	Type	Body Material	Body Style	Electrode Material
6028P0	5-wire	LCP	Convertible	General purpose glass
6028P1	5-wire	LCP	Convertible	Antimony
6058P0	5-wire	LCP	Union-mount	General purpose glass
6022P0	5-wire	Ryton	Convertible	General purpose glass
6422P0	2-wire	Ryton	Convertible	General purpose glass
6458P0	2-wire	LCP	Union-mount	General purpose glass
6428P0	2-wire	LCP	Convertible	General purpose glass
2028R0	5-wire	Ryton	Convertible	Platinum ORP
2028R1	5-wire	Ryton	Convertible	Gold ORP
2058R0	5-wire	LCP	Union-mount	Platinum ORP

Additional sensors are available—contact Hach to discuss the sensor for your application.

Prod. No. Description

SENSOR ACCESSORIES (order separately)

Interconnect Cables*

1W1055 For use with 5-wire sensors

1W0980 For use with 2-wire sensors

*Price/foot. Specify required length in whole feet.

Spare Union Adapters**

60G9753-101 LCP adapter

60G9753-301 Ryton adapter

**Each adapter includes two Viton O-rings and a retaining ring.

For additional accessories and mounting hardware options, visit www.hach.com/ProcesspHSensors

Visit pages 24-47 for information on Hach laboratory and field pH instruments and chemistries.

pH/ORP: Combination Sensor Kits, 3/4 inch

Especially suited for highly aggressive processes that may require frequent replacement.

Process Instruments



Low Price—High Performance

These combination sensors are designed for specialty applications for immersion or in-line mounting. The reference cell features a double-junction design for extended service life, and a built-in solution ground. The body is molded from chemically-resistant Rytan® or PVDF, and the reference junction is coaxial porous Teflon®. All sensors are rated 0 to 105°C up to 100 psig, and have integral 4.5 m (15 ft.) cables with tinned leads. The PC-series (for pH) and RC-series (for ORP) combination sensors are ideal for measuring mild and aggressive media.

Special Electrode Configurations

Sensors with rugged dome electrodes, “easy-to-clean” flat glass electrodes, and even HF (hydrofluoric acid) resistant glass electrodes are available for a wide variety of process solutions.

Temperature Compensation Element Option

The PC-series combination pH sensors are available with or without a Pt 1000 ohm RTD temperature element. The RC-series combination ORP sensors are supplied without a temperature element.

Versatile Mounting Styles

Sensors are available in three mounting styles—convertible, insertion, and sanitary.



Digital combination pH and ORP sensors are available in convertible, insertion, and sanitary mounting styles. Choose from rugged dome electrodes or “easy-to-clean” flat glass electrodes.

Primary Applications

- Drinking Water
- Wastewater
- Industrial Water
- Environmental

General Specifications*

pH Range
0 to 14 pH

Operating Temperature Range
0 to 105°C (32 to 221°F)

Pressure Range
0 to 6.9 bar (100 psi)

ORP Range
-2000 to +2000 mV

Operating Temperature Range
0 to 105°C (32 to 221°F)

Pressure Range
0 to 6.9 bar (100 psi)

*Dependent on specific sensor and mounting.

See next page for ordering information.

For more information, call to request Literature #2470, or visit www.hach.com

Visit pages 24-47 for information on Hach laboratory and field pH instruments and chemistries.

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pH/ORP: Combination Sensor Kits, 3/4 inch

CONTROLLER REQUIRED

For information about Hach digital and analog controllers, see pages 388-398.

Prod. No.

DIGITAL PC sc AND RC sc 3/4-INCH COMBINATION PH/ORP SENSORS

All PC sc and RC sc 3/4-inch combination sensors come complete with an integral 4.5 m (15 ft.) sensor cable, Digital Gateway, and 1 m (3.3 ft.) digital extension cable.

	Measurement	Sensor Style	Body Material
DPC1R1N	pH	Convertible	Ryton
DPC1R1A	pH	Convertible	Ryton
DPC1R2N	pH	Convertible	Ryton
DPC1R2A	pH	Convertible	Ryton
DPC1R3A	pH	Convertible	Ryton
DPC2K1A	pH	Insertion	PVDF
DPC2K2A	pH	Insertion	PVDF
DPC3K2A	pH	Sanitary	316 SS/PVDF
DRC1R5N	ORP	Convertible	Ryton
DRC2K5N	ORP	Insertion	PVDF

ANALOG PC AND RC 3/4-INCH COMBINATION PH/ORP SENSORS

All PC and RC 3/4-inch combination sensors come with an integral 4.5 m (15 ft.) standard length sensor cable.

	Measurement	Sensor Style	Body Material
PC1R1N	pH	Convertible	Ryton
PC1R1A	pH	Convertible	Ryton
PC1R2N	pH	Convertible	Ryton
PC1R2A	pH	Convertible	Ryton
PC1R3A	pH	Convertible	Ryton
PC2K1A	pH	Insertion	PVDF
PC2K2A	pH	Insertion	PVDF
PC3K2A	pH	Sanitary	316 SS/PVDF
RC1R5N	ORP	Convertible	Ryton
RC2K5N	ORP	Insertion	PVDF

DIGITAL GATEWAY

6120600 Use the Digital Gateway to connect analog PC and RC sensors to a Hach digital controller.

ACCESSORIES FOR DIGITAL AND ANALOG 3/4-INCH COMBINATION PH/ORP SENSORS

Prod. No.

Cables

Digital cables are used only with digital sensors or gateways when connecting to a digital controller.

6122400	Digital Extension Cable, 1 m (3.3 ft)
5796000	Digital Extension Cable, 7.7 m (25 ft)
5796100	Digital Extension Cable, 15 m (50 ft)
5796200	Digital Extension Cable, 31 m (100 ft)

Analog cables are used only with analog sensors, junction box, and controller.

1W1125	Analog interconnect cable for sensors w/o temp. compensation (order per foot)
1W0980	Analog interconnect cable for sensors with temp. compensation (order per foot)

Digital Termination Box

Used with digital extension cables when the desired cable length between the digital sensor/digital gateway and a digital controller is between 100 m (328 ft) and 1000 m (3280 ft).

5867000	Digital Termination Box
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Analog Junction Box

Used with analog interconnect cable when the desired cable length between analog sensor and analog controller is greater than the standard length of sensor cable. Each junction box includes terminal strip and gasket.

60A2053	Junction Box, Surface-mount, aluminum (includes mounting hardware)
60A9944	Junction Box, Pipe-mount, PVC, for 1/2-inch diameter pipe (includes mounting hardware)
60G2052	Junction Box, Pipe-mount, PVC, for 1-inch diameter pipe (includes mounting hardware)
76A4010-001	Junction Box, NEMA 4X (no mounting hardware included)

Sensors with Class I Division II safety classification are available—please contact your Hach representative.

**View the pH Maintenance Video
at: www.hach.com/videos**

Visit pages 24-47 for information on Hach laboratory and field pH instruments and chemistries.



pH/ORP: 8362 sc High Purity Water System

The ultimate in accurate and stable pH/ORP measurement.

The Model 8362 sc High Purity Water pH/ORP System is designed for use in electric power generation, industrial boiler, pharmaceutical, microelectronics, and other applications requiring ultimate accuracy when measuring pH/ORP in high purity water.

Complete System for Simple and Fast Operation

Pre-plumbed sample panel includes the electrode system, digital electronics junction box, flow meter, and mounting assembly. Simply attach the sample line, drain, and digital interconnect cable to the Hach sc100 or sc1000 Digital Controller, turn on the sample flow, and the system is in operation.

Self-Pressurizing Electrodes

Self-pressurizing electrodes require no maintenance or refilling of electrolyte reservoirs between normal electrode replacements. Replace the electrode once a year for optimal performance.

Accurate Temperature Measurement

The 100 ohm Platinum RDT is accurate to 0.1°C. Accuracy of temperature is critical for high purity water algorithms for measuring pH/ORP. Also, the stainless steel sheath of the temperature measuring device provides grounding of the sample at the electrode to reduce the effects of streaming currents.

Stainless Steel Construction

All stainless steel construction for long life and maximum measurement integrity. Stainless steel does not corrode in aggressive high purity water. The entire system is grounded and shields the measuring electrode from EMI and RFI interference.



Unmounted version available.
Call Hach for ordering information.

Process Instruments

Prod. No.	Description
8362 sc HIGH PURITY WATER PH/ORP PROBE SYSTEMS	
6178000	pH 8362 sc System includes sensor and 7.6 m (25 ft.) extension cable
6178001	ORP 8362 sc System includes sensor and 7.6 m (25 ft.) extension cable

For more information about the sc100 and sc1000 controllers, please see pages 388-393.

ACCESSORIES

08362=A=2000	Spare pH electrode
08362=A=2100	Spare ORP electrode

CABLES

Extension cables are used only with digital sensors or digital gateways when connecting to a digital controller.

6122400	Extension cable, 1 m (3.2 ft.)
5796000	Extension cable, 7.6 m (25 ft.)
5796100	Extension cable, 15.2 m (50 ft.)
5796200	Extension cable, 30.5 m (100 ft.)

For more information, call to request Literature #2409 or visit www.hach.com

Primary Applications

- Pure Water/Power
- Industrial Water

Specifications*

pH Range
-2 to 12 pH
Operating Temperature Range
0 to 80°C (32 to 176°F)
Pressure Range
0 to 4 bar (58 psi)
ORP Range
-1500 to +1500 mV
Pressure Range
0 to 4 bar (58 psi)

*Dependent on specific sensor and mounting.

Visit pages 24-47 for information on Hach laboratory and field pH instruments and chemistries.

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Salt Bridge and Standard Cell Solution

For regenerating Hach Differential pH/ORP sensors

Prod. No.	Description
SB-P1SV ¹	PEEK Salt Bridge, Kynar (PVDF) Outer junction For use with Regeneratable Differential pH and ORP Sensor—1 inch
60-9765-000-001 ²	LCP Salt Bridge, Kynar (PVDF) Outer junction For use with Regeneratable LCP or Ryton Differential pH and ORP Sensor—1-1/2 inch
25M1A1025-115	Standard Cell Solution, Concentrated pH 7.0 Buffer (equi-transferrant), 500 mL. For replenishing standard cell chamber while replacing salt bridges for Regeneratable Differential pH and ORP Sensors—1 inch
25M1A1001-115	Standard Cell Solution, Concentrated pH 7.0 Buffer (equi-transferrant), 500 mL. For replenishing standard cell chamber while replacing salt bridges for Regeneratable Encapsulated LCP or Ryton Differential pH and ORP Sensors—1-1/2 inch

¹PEEK body material salt bridges must be used with PEEK body material sensor

²LCP body material salt bridges must be used with LCP body material sensor

Salt Bridges are available in a variety of materials and pre-packaged quantities.
Please consult Hach for the correct Salt Bridge for your sensor.

**View the Salt Bridge Replacement Video
at: www.hach.com/videos**

pH Buffers and ORP Reference Solutions

Prod. No.	Description
2283549	pH 7 buffer 500 mL (1 pt)
2283449	pH 4 buffer 500 mL (1 pt)
2283649	pH 10 buffer 500 mL (1 pt)
2283556	pH 7 buffer 4L (approx. 1gal)
2283456	pH 4 buffer 4L (approx. 1gal)
2283656	pH 10 buffer 4L (approx. 1gal)
25M2A1001-115	200 mV reference sol. 500 mL (1 pt)
25M2A1002-115	600 mV reference sol. 500 mL (1 pt)
25M2A1001-123	200 mV reference sol. 4 L (approx. 1 gal)
25M2A1002-123	600 mV reference sol. 4 L (approx. 1 gal)



Visit pages 24-53 for information on Hach laboratory and field pH instruments and chemistries.

Phosphate: PHOSPHAX™ sc Analyzer

Accurate measurements over a broad measurement range.

- Wide detection limit from 0.05 mg/L to 50 mg/L
- Low cost of operation with proven analysis method
- Fast response time of 5 minutes, including sample preparation
- Easy installation at the measurement point
- Optional Filterprobe sc available for insitu membrane filtration
- Low maintenance

The Hach PHOSPHAX sc Phosphate Analyzer measures PO₄-P concentrations as low as 0.05 mg/L and as high as 50 mg/L. And operation costs are low because it uses 50% less chemicals. This is no “black box” system—you get transparent, high-quality measurements for reliable values.

Prod. No. Description

PHOSPHAX sc PHOSPHATE ANALYZER WITH Filterprobe sc

- 6159000** PHOSPHAX sc Phosphate Analyzer 0.05 to 15 mg/L, 115 Vac; includes filtration probe with 5 m heated hose
- 6159100** PHOSPHAX sc Phosphate Analyzer 0.05 to 15 mg/L, 115 Vac; includes filtration probe with 10 m heated hose
- 6159400** PHOSPHAX sc Phosphate Analyzer 1 to 50 mg/L, 115 Vac; includes filtration probe with 5 m heated hose
- 6159500** PHOSPHAX sc Phosphate Analyzer 1 to 50 mg/L, 115 Vac; includes filtration probe with 10 m heated hose

For two-channel version of the PHOSPHAX sc Phosphate Analyzer, please contact your Hach representative or call 1-800-227-4224.

CONTROLLER

This sensor requires a Hach sc100 (with power box) or sc1000 Digital Controller. See pages 388-393 for details.

MOUNTING ACCESSORIES

- LZY285** Rail Mounting Kit for PHOSPHAX sc analyzer and sc1000 controller
- LZY316** Rail Mounting Kit for PHOSPHAX sc analyzer
- LZY286** Stand Mounting Kit for PHOSPHAX sc analyzer and sc1000 controller
- LZY287** Stand Mounting Kit for PHOSPHAX sc analyzer
- LZX414.00.50000** Rim Mounting Kit for Filterprobe sc
- LZX414.00.60000** Rail Mounting Kit for Filterprobe sc

REAGENTS

- 2825254** PHOSPHAX Reagent, 2000 mL
- 2825352** PHOSPHAX Cleaning Solution, 1000 mL



For more information, call to request Literature #2488 or visit www.hach.com



NEW! Indoor version of PHOSPHAX sc is now available.

Process Instruments

Primary Applications

- Wastewater
- Industrial Water

Specifications*

Measurement Method

Photometric method using vanado-molybden

	Low Range	High Range
Measurement Range (PO ₄ -P)	0.05 to 15 mg/L	1 to 50 mg/L
Lower Detection Limit	0.05 mg/L	1 mg/L
Accuracy	2%, ±0.05 mg/L	2%, ±1 mg/L
Reproducibility	2%, ±0.05 mg/L	2%, ±1 mg/L

PHOSPHAX sc Phosphate Analyzer

Response time (T90)

Less than 5 minutes, including sample preparation

Measurement Interval

5 to 120 minutes, adjustable

Outputs

Relay, current outputs, and bus interface via sc100 (with power box) or sc1000 Multi-parameter Universal Controller

Special Features

- ASA UV-resistant, lockable housing, rated to IP55
- Automatic cleaning and calibration
- Extensive self-diagnostics
- Optional 2-channel version for continuous sample preparation

Sample Preparation

Filterprobe sc (see specifications below) or continuous sample preparation (approximately 500 to 1000 mL/min) with FILTRAX, ultrafiltration, etc.

Filterprobe sc

Operation

- In-situ membrane filtration
- Filter modules are exchangeable
- Continuous self-cleaning with air bubbles
- Particles larger than 0.15 µm are separated from sample stream

Immersion Depth

3 m (9.8 ft.), maximum

Sample Flow Rate

3 m/s, maximum

Filtrate Flow Rate

5 mL/minute, minimum, 4 out of 5 minutes

*Subject to change without notice.

See pages 183-184 for reagents, test kits, and accessories for measuring phosphate in the lab or field.

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Phosphate: Series 5000 Analyzer

Convenient, reliable, and economical phosphate analysis.



- **Low Maintenance**—analyzer includes auto-calibration and reliable unattended operation
- **Available in High and Low Range Phosphate models**
- **Sample failure alarm** automatically shuts down and restarts analyzer when sample flow is interrupted
- **Continuous auto-zero** on each sample analysis prevents interferences
- **Self-diagnostics** alert the operator to any abnormal conditions in the instrument
- **Grab samples** without interrupting normal sample flow
- **Low reagent consumption** and pressurized reagent delivery system reduce maintenance requirements

Greater Reliability and Economy Under Pressure

The Hach Series 5000 features a patented, pressurized reagent-delivery system that makes a peristaltic pump unnecessary. With the reagent chamber pressurized, reagents are automatically supplied to a set of microprocessor-controller solenoid valves. During each cycle, the valves release reagents in precisely controlled volumes, ensuring the accuracy of each test.

Hach's Series 5000 family of colorimetric analyzers combines auto-calibration, intelligent self-diagnostics and ultra-low reagent use, all in a proven system design. In addition to continuous monitoring, the Series 5000 also allows convenient grab sample analysis without interruption of normal sample flow.

See page 448 for sample conditioning accessories.

Primary Applications

- Drinking Water
- Wastewater
- Pure Water/Power
- Industrial Water

Specifications*

Sample Requirements

13.8 to 55.2 kPa (2 to 8 psig) regulated; 34.5 kPa (5 psig) nominal. Sample temperature specifications may vary according to the specific model.

Alarms

Two sample concentration alarms, one analyzer system warning and one analyzer system shutdown alarm (each equipped with an unpowered SPDT relay rated for 5 A resistive load at 240 Vac and two contacts rated for 1 A resistive load at 3 Vac and 42 Vdc)

Power Requirements

115/230 Vac, 50/60 Hz, switch selectable; 52 VA, 32 W maximum

Reagent Pressurization Source

137.9 to 413.7 kPa (20 to 60 psig) regulated filtered nitrogen or compressed air; (Filter and regulator are included with instrument)

Air Purge (optional) 15-scfh (standard cubic feet per hour) instrument-quality air, 1/4-inch OD quick connect tubing fitting

Enclosure

Molded ABS plastic NEMA-4X/IP65 cabinet with gasketed door

Mounting

Bench top or panel mounting only

**Subject to change without notice.*

Prod. No.	Description
6000500	Low Range Phosphate Analyzer 120/240 Vac
6000100	High Range Phosphate Analyzer 120/240 Vac
4563300	Low Range Phosphate Reagent Set
4563900	High Range Phosphate Reagent Set

POWER CORDS AND MAINTENANCE KITS

Maintenance Kits include reagent tubing, colorimetric lamp assembly, a stir bar, reagent caps, and fittings to be replaced annually.

4696400 Power cord, 120 Vac, 15 A, 1.83 m (6 ft)

4743900 Power cord, 240 Vac, 10 A, 2.44 m (8 ft), continental European plug

4698100 Annual Maintenance Kit (for high range phosphate model)

4698133 Annual Maintenance Kit (for low range phosphate model)



For more information, call to request Literature #2405 or visit www.hach.com

See pages 183-184 for reagents, test kits, and accessories for measuring phosphate in the lab or field.



Sample Conditioning: Filtrax™ System

Simple, reliable, self-cleaning micro filtration.

- High permeate quality
- Low operating costs
- Continuous air cleaning minimizes cleaning required
- No need for an expensive, high maintenance submersible pump
- Works reliably, even with a high sludge volume index or floating sludge

Filtrax—Filtration Technology for More Reliable Operation

Hach's Filtrax sample filtration system continuously extracts sample directly from the aeration basin or final settling tank and cleans its built-in filter membranes automatically.

The Filtrax prepares sample through two ultra-filtration membranes (0.15µ) that are immersed in the process tank. Two small, peristaltic pumps pull the sample through one filter at a time, allowing for optimal cleaning of the other. The Filtrax automatically cleans both filter membranes, while immersed, by forcing a vigorous stream of air bubbles against the sides of the filter modules.

The Filtrax System is ideal for outdoor use in any climate. Virtually maintenance free, all tubing is completely accessible and easy to replace.

Moving parts never come into contact with the sample. The system self-monitors flow rate across the filter media. One programmable alarm relay can be used to alert operators to inspect the Filtrax system when flow decreases, and a second relay can shut the unit down if flow decreases further.



Process Instruments

Primary Applications

- Wastewater
- Industrial Water

Prod. No.	Description
5738900	Filtrax System 2 m unheated sample delivery hose, 115 Vac
5739000	Filtrax System 10 m heated sample delivery hose, 115 Vac
5739100	Filtrax System 20 m heated sample delivery hose, 115 Vac
5738901	Filtrax System 2 m unheated sample delivery hose, 230 Vac
5739001	Filtrax System 10 m heated sample delivery hose, 230 Vac
5739101	Filtrax System 20 m heated sample delivery hose, 230 Vac

ACCESSORIES

4696400	Power cord, 115 Vac, 6ft.
4743900	Power cord, 230 Vac, 6ft.

REPLACEMENT ITEMS

LZX667	Filtrax maintenance kit
LZX677	Filter Module

MOUNTING ACCESSORIES

LZX414.00.40000	Basin Wall Mounting Kit for Module Holder
LZX676	Mount kit for control unit

For more information, call to request
Literature #2424 or visit www.hach.com

Specifications*

Sample Flow
Approx. 900 mL/ h
Power Supply
115V or 230 V ± 10 % AC, 50-60 Hz
Outputs
Two programmable potential free contact (115V or 230V, max. 3 A)
Sample Temperature Range
41°F to 104°F (5°C to 40°C)
Ambient Temperature Range
-4°F to 104°F (-20°C to 40°C)
Enclosure Class
IP 55 (outdoor installation)
Certification
CE, UL, CSA
Dimensions
Control unit (W x H x D): 16.9" x 20.9" x 8.7" (430 x 530 x 220 mm) Module holder (W x H x D): 3.6" x 19.7" x 13.4" (92 x 500 x 340 mm)
Shipping Weight
Up to 90 lbs (41kg) depending on delivery hose option
Sample Suction Hose
5 m (heated)
Sample Delivery Hose Options
2 m (unheated) 10 m (heated) 20 m (heated)

*Subject to change without notice.

See pages 183-184 for reagents, test kits, and accessories for measuring phosphate in the lab or field.

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Sample Conditioning: Accessories

Sample Sequencer IV and Sample Manifold

The Sentry Sample Sequencer IV can electronically switch a maximum of eight sample streams between two analyzers. This unit is designed for use with the Series 5000 line of analyzers but may be used with other systems that need multi-stream sequencing capability.

The Sentry Sample Sequencer IV can be programmed from the keypad on the front display or via a computer. The most recent 255 values can be viewed with a built-in data logger.

This sequencer can accept two 0/4-20 mA inputs along with two digital inputs for calibration indication. The system is equipped with ten DPDT relays for point number indication and replicated analyzer alarms—as well as eight isolated 0/4-20 mA outputs.

The manifold has a unique block-and-bleed design which prevents cross contamination and assures complete purging of the sample line.



Sample Heater for Series 5000 Analyzers

Set points between 20 and 50°C output temperature and flow range of 50 to 300 mL/minute. Carries ETL and ETL Safety marks for U.S. and Canada, and CE mark for Europe.

Sample Cooler

Cools 200 mL/min of sample from 371°C (700°F) to within 5.6°C (10°F) of cooling water temperature. Constructed of 316 stainless steel, this cooler has a tube rating of 17,235 kPa (2500 psi).

Head Pressure Regulator

Use with a CL17 or Pump-Colorimeter Analyzer to control sample head pressure, as a sample failure alarm, or to shut off the instrument in case of sample failure. It has a built-in float switch and contains a built-in, self-cleaning filter.

Stainless Steel Sample Pressure Conditioning Kit for Series 5000 Analyzers

The stainless steel sample conditioning kit replaces the plastic kit which comes with this analyzer. It will handle up to 3425 kPa (500 psi) and 50°C.



Flow Meters

Measure and control sample flow within $\pm 4\%$ accuracy in four ranges: 10 to 110, 20 to 300, 60 to 700, and 60 to 1500 mL/min. Rugged polycarbonate body with stainless steel frame, valve, and fittings. Pressure rated to 689 kPa (100 psi) maximum. Temperature rated to 54°C (130°F) maximum.

Strainer Kits

Specially developed for wastewater and cooling water applications, these three all-purpose, plastic strainers remove particulate matter and require less servicing than conventional strainers. Choose from the acetal strainer (withstands water hammer, 120 mesh), the PVC strainer (40 mesh), or the self-cleaning Y-Strainer (40 mesh).

Submersible Pump

Ideal for applications where sample must be raised for delivery to an analyzer, this 1/6-HP pump provides 20 feet of lift at a flow rate of 8.7 gallons per minute. It is supplied with an 18-foot power cord and has a 1" NPT outlet connection. (Little Giant)

Prod. No. Description

SAMPLE SEQUENCER

- 2873100** Sample Sequencer IV
Control up to 8 points between two different units

SAMPLE MANIFOLD

- 2616604** Manifold Sample Valve Assembly, four sample
2616608 Manifold Sample Valve Assembly, eight sample
2628000 Power supply, 12 Vdc, 120 Vac, 60 Hz
2628002 Power supply, 12 Vdc, 220 Vac, 50 Hz, European-style plug

ACCESSORIES

- 2634800** Connector, 1/16" NPT to 1/8" OD tubing
4599600 Connector, 1/8" NPT to 1/4" OD, stainless steel compression fitting
2654300 Fuse, 1 amp, 5 mm x 15 mm, 2 AG
2634700 Solenoid Valve Repair Kit
4868500 Sample Heater for Series 5000 Analyzer, 115 Vac

Prod. No. Description

- 3029100** U.S. style heavy duty power cord for 4868500
4868502 Sample Heater for Series 5000 Analyzer, 220 Vac
1757700 Sample Cooler
4598300 Stainless Steel Sample Pressure Conditioning Kit
4696400 Power cord, 115 Vac, 15 A, 1.83 m (6 ft)
4743900 Power cord, 230 Vac, 10 A, 2.44 m (8 ft), continental European plug
4643600 Flow Meter with valve, 20 to 300 mL/min
4028200 Flow Meter with valve, 50 to 700 mL/min
4028400 Flow Meter with valve, 100 to 1600 mL/min
4961800 Strainer Kit, acetal plastic (120 mesh)
1850600 Strainer Kit, PVC (40 mesh)
4661800 Strainer Kit, self-cleaning Y (40 mesh)
4662400 Spare Filter Element, 40 mesh, for P/Ns 18506-00 and 46618-00
4961900 Spare Filter Element, 120 mesh
3063900 Pump, 1/6 HP Submersible
4855100 Sample Cooler for Surface Scatter Turbidimeters

Silica: Series 5000 Analyzer

The industry standard for silica analysis.

- Low reagent consumption and pressurized reagent delivery system reduce maintenance requirements
- Sample failure alarm automatically shuts down and restarts analyzer when sample flow is interrupted
- Continuous auto-zero on each sample analysis prevents interferences
- Self-diagnostics alert the operator to any abnormal conditions in the instrument
- Grab samples without interrupting normal sample flow
- Three choices for calibration, including programmable autocalibration

Greater Reliability and Economy Under Pressure

The Hach Series 5000 features a patented, pressurized reagent-delivery system that makes a peristaltic pump unnecessary. With the reagent chamber pressurized, reagents are automatically supplied to a set of microprocessor-controller solenoid valves. During each cycle, the valves release reagents in precisely controlled volumes, ensuring the accuracy of each test.

Hach's Series 5000 family of colorimetric analyzers combines auto-calibration, intelligent self-diagnostics and ultra-low reagent use, all in a proven system design. In addition to continuous monitoring, the Series 5000 also allows convenient grab sample analysis without interruption of normal sample flow.

See page 448 for sample conditioning accessories.



Process Instruments



Prod. No.	Description
6000000	Silica Analyzer 120/240 Vac
6000001	Silica Analyzer with 120 Vac sample heater
6000002	Silica Analyzer with 240 Vac sample heater
4562700	Silica Reagent Set
1757700	Sample Cooler, stainless steel

ACCESSORIES AND MAINTENANCE KITS

Maintenance Kits include reagent tubing, colorimetric lamp assembly, a stir bar, reagent caps, and fittings to be replaced annually.

4697900	Lamp Assembly
4696400	Power Cord, 125 Vac, 15 A, 1.83 m (6 ft)
4743900	Power Cord, 250 Vac, 10 A, 2.44 m (8 ft), continental European plug
4698100	Annual Maintenance Kit

SAMPLE SEQUENCE PROGRAMMER

2873100	Sample Sequencer IV, up to 8 streams between two analyzers
---------	--

SAMPLE MANIFOLD

2616604	4-sample Valve Assembly
2616608	8-sample Valve Assembly
2628000	Power Supply, 12 Vdc, 120 Vac, 60Hz
2628002	Power Supply, 12 Vdc, 220 Vac, 50Hz

For more information, call to request Literature #4545 or visit www.hach.com

Primary Applications

- Pure Water/Power

Specifications*

Sample Requirements

Regulated to 5 ± 3 psig (34.5 \pm 20.7 kPa)
Flow rate from 100 to 300 mL/min
Sample temperature between 5 and 50°C
A sample pressure control kit is provided

Alarms

Two sample concentration alarms, one analyzer system warning and one analyzer system shutdown alarm (each equipped with an unpowered SPDT relay rated for 5 A resistive load at 240 Vac and two contacts rated for 1 A resistive load at 3 Vac and 42 Vdc)

Power Requirements

115/230 Vac, 50/60 Hz, switch selectable; 52 VA, 32 W maximum

Reagent Pressurization Source

137.9 to 413.7 kPa (20 to 60 psig) regulated filtered nitrogen or compressed air; (Filter and regulator are included with instrument)
Air Purge (optional) 15-scfh (standard cubic feet per hour) instrument-quality air, 1/4-inch OD quick connect tubing fitting

Enclosure

Molded ABS plastic NEMA-4X/IP65 cabinet with gasketed door

Mounting

Bench top or panel mounting only

**Subject to change without notice.*

See pages 187-188 for reagents, test kits, and accessories for measuring silica in the lab or field.

Find it here... Buy it today on www.hach.com
U.S. customers only.



Sludge Level: SONATAX sc Probe

Low-maintenance sludge level monitor delivers superior accuracy.



SONATAX sc probes can be connected to an sc1000 or sc100 controller.
See pages 388-393 for more information on Hach sc controllers.



Primary Applications

- Wastewater
- Drinking Water
- Industrial Water

Specifications*

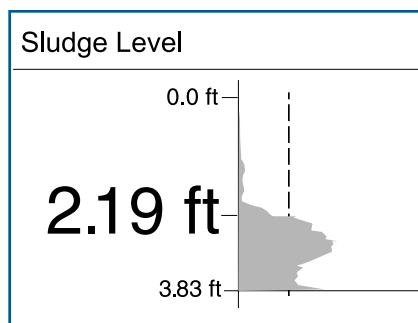
Measuring Principle Ultrasonic measurement	Calibration Factory calibrated
Range 0.2 to 12 m (0.6 to 40 ft.)	Probe Construction Wiper: Silicon Body: Stainless steel Face: Polyoxymethylene
Resolution 0.03 m (0.09 ft.)	Certifications CE certified to EN 61326-1:1998 /A1/A2/A3 & EN 61010-1:2001
Accuracy ±0.1 m (±0.33 ft.)	Dimensions 130 x 185 mm (5 x 7.3 in.)
Operating Temperature >0 to 50°C (>32 to 122°F)	Weight 3.5 kg (7.7 lbs.)
Power Requirement 12 V, 2.4 W	
Measurement Interval 10 to 1,800 seconds (adjustable)	
Probe Mounting Fixed location or pivot assembly	

**Subject to change without notice.*

- For a continuous ultrasonic measurement of sludge blanket level
- Reduced maintenance with innovative wiper design
- Superior accuracy with automatic frequency adjustment
- Digitized probe, temperature compensation, and position sensor ensure reliability
- Visual performance indicator enhances troubleshooting

Principle of Operation

The Hach SONATAX sc Sludge Level Probe uses an ultrasonic pulse to accurately measure the sludge level. An ultrasonic signal sent from the probe is directed towards the sludge blanket in the tank. Height and depth measurements are based on the time it takes for the ultrasonic echo to return to the probe and are displayed on the controller (figure below).



Graphical display of sludge profile is available only with the sc1000 controller.

Prod. No.

Description

PROBE SYSTEMS

- 5770400** SONATAX sc System includes one SONATAX sc probe, pivot mount hardware, and sc100 standard controller

SONATAX sc PROBE

- LXV431.99.00002** One SONATAX sc Sludge Level probe
5773000 One SONATAX sc Sludge Level probe with pivot mount hardware

MOUNTING ACCESSORIES

- LZX414.00.70000** Fixed Point Mount for probe (for mounting probe at a fixed location)
LZX414.00.71000 Pivot Mount for probe (for mounting probe on a pivot assembly for clarifiers with skimmers)
LZX414.00.73000 Rail Mount kit for probe (rail mount must be ordered with either LXZ414.00.70000 or LXZ414.00.71000)
LZX414.00.72000 Pivot Mount for Probe with 0.35m extension pipe
LZX414.00.74000 Rail Mount kit for probe for rectangular railing (rail mount must be ordered with either LXZ414.00.70000 or LXZ414.00.7100)

REPLACEMENT PARTS

- LZX328** Wiper Blades for Probe, replacement only, pkg. of 5

For more information, call to request Literature #2548, or visit www.hach.com

Sodium: 9245 / 9240 Analyzer

Low-level sodium measurement in high purity water.

- Detection limit of 0.01 ppb (0 to 10,000 ppb)
- 100 days between reagent changes
- Automatic reactivation ensures optimum response time and performance; no acid etching required!
- Easy to operate and maintain with automatic calibration
- Save money (and footprint) by choosing a multi-stream 9240 sodium analyzer.

Principle of Operation

The 9245/9240 Sodium Analyzer uses ion selective electrode measurement after pH conditioning. Sample pH conditioning is essential for limiting interference of temperature or other ions on sodium measurement. Constant, temperature compensated buffering is assured using regulated reagent addition.

Hach 9245/9240 Sodium Analyzer includes reagents, US fittings, and user's manual.

Prod. No.	Description
6849400	9245 Sodium Analyzer with enclosure
6849500	9245 Sodium Analyzer panel mount
6858000	9245 Sodium Analyzer with Cation Kit Option, panel mount
6858010	9245 Sodium Analyzer with Cation Kit Option, with enclosure

PANEL-MOUNT UNIT

9001600	9240 Sodium Analyzer, 1-channel
9001700	9240 Sodium Analyzer, 2-channel
9000200	9240 Sodium Analyzer, 3-channel
9000300	9240 Sodium Analyzer, 4-channel
9000800	9240 Sodium Analyzer, 1-channel with Cation Kit
9000900	9240 Sodium Analyzer, 2-channel with Cation Kit
9001000	9240 Sodium Analyzer, 3-channel with Cation Kit
9001900	9240 Sodium Analyzer, 4-channel with Cation Kit

UNIT WITH ENCLOSURE

9000400	9240 Sodium Analyzer, 1-channel
9000500	9240 Sodium Analyzer, 2-channel
9000600	9240 Sodium Analyzer, 3-channel
9000700	9240 Sodium Analyzer, 4-channel
9001200	9240 Sodium Analyzer, 1-channel with Cation Kit
9001300	9240 Sodium Analyzer, 2-channel with Cation Kit
9001400	9240 Sodium Analyzer, 3-channel with Cation Kit
9001500	9240 Sodium Analyzer, 4-channel with Cation Kit

UPGRADE OPTIONS

09125=A=1485	Profibus DP, with board
09125=A=2485	RS485 JBUS/MODBUS, with board

ACCESSORIES

595=010=000	Sample Filter; 100 micron, metric fittings
595=010=005	Sample Filter; 100 micron, imperial fittings
09240=A=8405	Static Heat Exchanger System, imperial fittings

CONSUMABLES

09240=A=8000	1-year Spare Part Kit
363140,00500	Reference Electrolyte, KCl, 3 M, 500 mL
2834453	Di-isopropylamine (DIPA), 1 L
2835153	Sodium Standard, 10 ppm, 1 L
2834253	Sodium Standard, 100 ppm, 1 L
2507149	Sodium Nitrate, 0.5M, 500 mL

Only available in US and Canada.

NEW!

Process Instruments



Take a video tour of the 9240 Analyzer at: www.hach.com/videos

Primary Applications

- Pure Water/Power
- Industrial Water

Specifications*

Measuring Range

0 to 10,000 ppb, freely programmable
0 to 200 ppm with Cation-kit option

Accuracy

±0.1 ppb or ±5% of reading, whichever is greater
Cationic application: ±2 ppb or 5% reading, whichever is greater

Repeatability

< 0.02 ppb or 1.5% reading, whichever is greater, within 10°C variation

Detection Limit

0.01 ppb

Response Time

1 cycle, minimum 10 minutes (t=90%)

Ambient Temperature

5 to 50°C (41 to 122°F)

*Subject to change without notice.

Visit pages 24-47 for information on Hach laboratory and field sodium instruments and chemistries.

Find it here... Buy it today on www.hach.com

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Source Water Monitoring: Panel

Continuously monitor the quality of your incoming source water.



- Easily hooked up to Event Monitor for advanced event detection capability
- Anticipate changes to the treatment process that are needed to react to storms, algal blooms, industrial discharge, chemical spills, reservoir stratification/destratification, construction activity, sewage spills and other natural or man-made occurrences
- Improve process control—make necessary changes to your chemical quantities before the water enters your plant
- Improve your response time to changes in your incoming water
- Improve taste and odor problems
- Test up to six different parameters in one common trough, saving space and effort
- One controller for all sensors
- Can upgrade system with TOC analyzer or auto-sampler

Source waters can be vulnerable to an accidental or intentional contaminant events. Monitoring an input water source can provide useful information to the Drinking Water Plants that process incoming water. Plants can shut their intake down should their Source Water Panel parameters change significantly.

Parameters Used to Monitor Source Water

Parameter	Product to Measure	Rational
Organics	UVAS sc probe, 5mm	Useful for season changes and accidental spills of organic nature
Ammonium	NH4D degradation of organic matter	May indicate presence of pesticides or other biological
pH	pH sensor, Rytan	Acid/base relationships within water
Conductivity	Conductivity Inductive	May indicate presence of ionic species; measures the total ionic concentration in water
ORP	ORP Sensor	May indicate sudden changes for oxidative or reducing species introduced into the water
Turbidity, High Range	SOLITAX t-line	May indicate some chemical compounds or increased bacterial levels (can measure suspended solids as well if proper Prod. No. ordered)
Dissolved Oxygen, Luminescent	LDO	Sudden change may indicate toxic conditions that effect algal respiration or increased levels of bacteria using up the oxygen
Level	Level	Useful with SWP trough
Nitrate	NITRATAX plus sc 5 mm	Nutrient level within water; agricultural runoff

Specifications*

Dimensions 31" x 29"	Sample Pressure 20 – 80psig	Data Logging about 28 days; first in, first out
Inlet Dimension 3/8 FNPT supplied with 1/2 OD tubing quick connect fitting	Power 90-240 Vac for use worldwide	Probes hold accuracy specifications.
Drain (Outlet) Dimension 3/4 FNPT supplied with 3/4 barb fitting	Certifications UL/GSA/CE Compliant	
Flow Required Up to 4,000 mL/minute	Mounting Wall or rack	
Minimum Flow Requirement 900 mL/minute	Weight 65 lbs	

**Subject to change without notice.*

Contact your local Hach sales representative to configure a Source Water Monitoring Panel for your application.

For more information, call to request Literature #2610, or visit www.hachst.com

Suspended Solids & Turbidity: SOLITAX® sc

Accurate color-independent suspended solids and turbidity measurements.

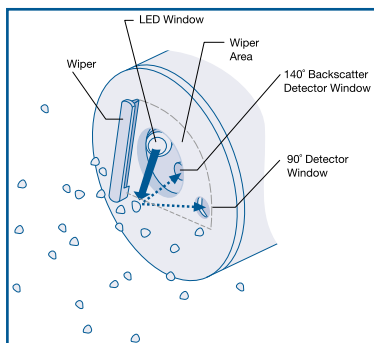
- Self-cleaning device prevents erroneous values
- Excellent correlation to laboratory analysis
- Fully serviceable sensors extend the life of the sensor
- Easy one-point calibration
- Any two SOLITAX® sc sensors can be installed using one Hach sc100 Controller

Greater Accuracy, Less Maintenance

Hach SOLITAX sc sensors provide accurate, color-independent measurement of turbidity and suspended solids in drinking water, wastewater, and industrial process applications. A self-cleaning device prevents measurement error due to fouling. This system's reliable performance and full data communication capability help improve process control and reduce treatment costs associated with polymer use, digester volume, and sludge handling.

Principle of Operation

With a dual-beam infrared/scattered light photometer, the SOLITAX sc sensors are capable of measuring either turbidity or, on certain models, both turbidity and suspended solids. A backscatter photoreceptor enables the instrument to accurately measure suspended solids. (Included on all models except the SOLITAX sc t-line.)



See next page for ordering information.



Process Instruments

For more information, call to request Literature #2472, or visit www.hach.com

Primary Applications

- Drinking Water
- Wastewater
- Industrial Water

Specifications*

Measuring Principle

Dual beam infrared/scattered light photometer to measure turbidity. A backscatter photoreceptor to measure suspended solids.

Range

t-line sc sensor†

Turbidity only 0.001 to 4000 NTU

ts-line sc sensor†

Turbidity 0.001 to 4000 NTU

Suspended Solids 0.001 mg/L to 50 g/L**

hs-line sc sensor†

Turbidity 0.001 to 4000 NTU

Suspended Solids 0.001 mg/L to 500 g/L**

inline sc sensors††

Turbidity 0.001 to 4000 NTU

Suspended Solids 0.001 mg/L to 50 g/L**

highline sc sensors††

Turbidity 0.001 to 4000 NTU

Suspended Solids 0.001 mg/L to 500 g/L**

Accuracy

Turbidity

Without calibration < 5% of the measured value

±0.01 FNU/NTU

with calibration < 1% of the measured value

±0.01 FNU/NTU

Repeatability

Turbidity

Less than 1% of reading

Suspended Solids

Less than 3% of reading (depends on the homogeneity of municipal activated sludge)

Response Time

1s ≤ T90 ≤ 300s (adjustable)

Calibration

Turbidity

Formazin or 800 NTU StablCal® Standard

Suspended Solids

Based on gravimetric SS analysis with a correction factor procedure

Operating Temperature

>0 to 40°C (>32 to 104°F)

Weight

Insertion stainless steel: 2.4 kg (5.3 lb.)

Immersion, stainless steel: 1.38 kg (3.0 lb.)

Immersion, PVC: 0.52 kg (1.2 lb.)

*Subject to change without notice.

** With SiO₂ standard solution

†Sensors for immersion in open tanks

††Sensors for insertion in pipes

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U.S. customers only.



Suspended Solids & Turbidity: SOLITAX® sc

Quick Reference Guide

Product Name	t-line sc	ts-line sc	hs-line sc	inline sc	highline sc
Product Description	Turbidity sensor for immersion in open tanks	Solids and Turbidity sensor for immersion in open tanks	Solids and Turbidity sensor for immersion in open tanks	Solids and Turbidity sensor for insertion in pipes	Solids and Turbidity sensor for insertion in pipes
Range	Turbidity: 0.001-4000 NTU	Turbidity: 0.001 to 4000 NTU Suspended Solids: 0.001 mg/L to 50 g/L*	Turbidity: 0.001 to 4000 NTU Suspended Solids: 0.001 mg/L to 500 g/L*	Turbidity: 0.001 to 4000 NTU Suspended Solids: 0.001 mg/L to 50 g/L*	Turbidity: 0.001 to 4000 NTU Suspended Solids: 0.001 mg/L to 500 g/L*
Material of Construction	PVC	Stainless Steel or PVC	Stainless Steel or PVC	Stainless Steel	Stainless Steel
Product Number	LXV423.99.10000	LXV423.99.10100 (PVC) LXV423.99.00100 (SS)	LXV423.99.10200 (PVC) LXV423.99.00200 (SS)	LXV424.99.00100	LXV424.99.00200

*With SiO₂ standard solution.

Prod. No. Description

SOLITAX sc TURBIDITY AND SUSPENDED SOLIDS ANALYZER SYSTEMS

(common controller and sensor configurations)

Immersion in Open Tanks Applications

- 6940000** Turbidity Analyzer includes sc100 controller and PVC t-line sc sensor (0.001 to 4000 NTU) with wiper
- 6940100** Turbidity and Suspended Solids Analyzer includes sc100 controller and stainless steel ts-line sc sensor (0.001 to 4000 NTU, 0.001 mg/L to 50 g/L*) with wiper
- 6940200** Turbidity and High Range Suspended Solids Analyzer includes sc100 controller and stainless steel hs-line sc sensor (0.001 to 4000 NTU, 0.001 mg/L to 500 g/L*) with wiper

Insertion in Pipes Applications

- 6940300** Turbidity and Suspended Solids Analyzer includes sc100 controller, stainless steel inline sc sensor (0.001 to 4000 NTU, 0.001 mg/L to 50 g/L*) with wiper, and insertion mounting kit
- 6940400** Turbidity and High Range Suspended Solids Analyzer includes sc100 controller, stainless steel highline sc sensor (0.001 to 4000 NTU, 0.001 mg/L to 500 g/L*) with wiper, and insertion mounting kit

NOTE

1. Power cords must be ordered separately.
2. Fixed point installation kit or handrail mount kit must be ordered separately for all immersion analyzers.

INDIVIDUAL SOLITAX sc SENSORS

Immersion Sensors

- LXV423.99.10000** Turbidity, t-line sc, PVC with wiper (0.001 to 4000 NTU)
- LXV423.99.10100** Turbidity and Suspended Solids, ts-line sc, PVC with wiper (0.001 to 4000 NTU, 0.001 mg/L to 50 g/L*)
- LXV423.99.00100** Turbidity and Suspended Solids, ts-line sc, stainless steel with wiper (0.001 to 4000 NTU, 0.001 mg/L to 50 g/L*)
- LXV423.99.10200** Turbidity and Suspended Solids, hs-line sc, PVC with wiper (0.001 to 4000 NTU, 0.001 mg/L to 500 g/L*)
- LXV423.99.00200** Turbidity and Suspended Solids, hs-line sc, stainless steel with wiper (0.001 to 4000 NTU, 0.001 mg/L to 500 g/L*)

Insertion Sensors

- LXV424.99.00100** Turbidity and Suspended Solids, inline sc, stainless steel with wiper (0.001 to 4000 NTU, 0.001 mg/L to 50 g/L*)
- LXV424.99.00200** Turbidity and Suspended Solids, highline sc, stainless steel with wiper (0.001 to 4000 NTU, 0.001 mg/L to 500 g/L*)

Prod. No. Description

ACCESSORIES

- 5733000** Calibration Kit, includes calibration cylinder, two 500-mL 800 NTU StablCal®, and a sensor bracket
- 2660549** 800 NTU StablCal®, 500-mL (two required per calibration)
- LZX050** Wiper Blades, replacement only, pkg. of 5
- LZX961.54** Sun Shield for sc100 controller

CABLE ACCESSORIES

- 5796000** 7.6 m (25 ft.) Extension Cable
- 5796100** 15.2 m (50 ft.) Extension Cable
- 5796200** 30.5 m (100 ft.) Extension Cable

[†]Maximum total length 100 m (328 ft.)

INSTALLATION ACCESSORIES

- 5734400** Fixed Point Installation Kit for t-line, ts-line, and hs-line immersion sensors, includes stand and sun shield for controller and pipe for sensor cable (See page 469 for installation drawing.)
- 5738400** Insertion Mounting Kit for inline and highline insertion sensors (ball valve and extraction system). Kit includes a 4 inch pre-coped Carbon Steel Flange. Non-coped flanges are available. See below.
- AHA033NPT** Sensor Adapter, straight 1-1/2 FNPT
- AHA034NPT** Sensor Adapter, elbow 1-1/2 FNPT 90°
- MH236B00Z** Handrail Mounting Kit (for sensor to be used with either adapter above) includes 1.5-inch diameter by 7.5-ft long CPVC pipe and swivel/pivot/pipe clamp assembly
- LZX660** Non-coped stainless steel welding flange for insertion kit
- LZX661** Non-coped carbon steel welding flange for insertion kit

*With SiO₂ standard solution

HACH SERVICEPLUS EXTENDED WARRANTY

FSPWESOLITAX SOLITAX Partnership Ex War Plus

Hach ServicePlus Extended Warranty programs extend the term of your standard warranty period and additionally provide your covered product with factory recommended at-your-site preventative maintenance services, calibration services and NIST backed certificates. For additional information about ServicePlus Programs please contact us at: (800) 227-4224, #6178.



Measures on-line suspended solids in virtually all applications under the strictest regulatory conditions.

- Twelve different instrument versions and thirty mounting styles
- Redundant optical system and self-cleaning wiper version for high solid environments
- High temperature probe that withstands temperatures of up to 90°C
- Specially designed probes for measurement in high hygienic regulatory conditions
- The only titanium suspended solids probe in the market designed for the most difficult environments
- Two parameters in one instrument—Suspended Solids and Turbidity

NEW!

Principle of Operation

The Hach TSS sc probes have double optical systems with two pulsating infrared LEDs and four receivers. As the transmitted light is scattered, the receivers pick up the incident light at 90° and 120° angles effectively doubling the accuracy of the instrument. This eight channel measurement system, with an integrated bubble and temperature compensating software, enables the instrument to have a wide measuring range that effectively cover most applications, from the darkest pre-treated water to the freshest of spring waters, with one instrument.

Prod. No. Description

TSSsc TURBIDITY AND SUSPENDED SOLIDS SENSORS
(0.001-9999 FNU & 0.001-500g/L)

Immersion in Open Tanks Applications

- LXV323.99.10002** TSS sc Turbidity & Suspended Solids w/o wiper
- LXV324.99.10002** TSS W sc Turbidity & Suspended Solids w/wiper
- LXV325.99.10002** TSS HT sc Turbidity & Suspended Solids w/o wiper
- LXV329.99.10002** TSS TITANIUM2 sc Turbidity & Suspended Solids w/o wiper
- LXV330.99.10002** TSS TITANIUM7 sc Turbidity & Suspended Solids w/o wiper

Insertion in Pipes Applications

- LXV323.99.20002** TSS sc TriClamp Turbidity & Suspended Solids w/o wiper
- LXV324.99.20002** TSS W sc TriClamp Turbidity & Suspended Solids w/wiper
- LXV325.99.20002** TSS HT sc TriClamp Turbidity & Suspended Solids w/o wiper
- LXV329.99.20002** TSS TITANIUM2 sc TriClamp Turbidity & Suspended Solids w/o wiper
- LXV330.99.20002** TSS TITANIUM7 sc TriClamp Turbidity & Suspended Solids w/o wiper
- LXV326.99.10002** TSS VARI sc Turbidity & Suspended Solids w/o wiper
- LXV327.99.10002** TSS XL sc TriClamp Turbidity & Suspended Solids w/o wiper

CONTROLLER

This sensor requires a Hach sc100 or sc1000 Digital Controller. See pages 388-393 for details.

ACCESSORIES

- LZY634** Wiper set TSS sc
(for 5 changes with screws and screwdriver)
- LZY635** Maintenance set wiper
(consisting of wiper, wiper axis 2-parts and gaskets)
- LZY653** Gasket Silicon for TriClamp mounting
- LZY654** Gasket PTFE for TriClamp mounting
- LZY655** Gasket FPM for TriClamp mounting
- LZY656** Clamp 2-parts, with screw type clamp
for TriClamp mounting
- LZY657** Clamp 3-parts, with screw type clamp
for TriClamp mounting (to use with PTFE gasket)



The TSS sc probes family is digital and can be connected to an sc1000 or sc100 Controller.

See pages 388-393 for more information on Hach sc Controllers.

For more information, call to request Literature #2657 or visit www.hach.com

Primary Applications

- Industrial Water
- Food & Beverage

Specifications*

Measurement Method

Combined multiple beam alternating light method with infrared diode system and beam focusing
Turbidity (TRB): 2-channel 90° scattered light measurement in accordance with DIN/EN 27027/ISO 7027, wavelength = 60 nm
Solids (TS): 90° and 120° scattered light measurement, wavelength = 60 nm

Measuring Range

Turbidity (TRB): 0.001 to 9,999 FNU
Solids (TS): 0.001 to 500 g/L
With SiO₂ standard solution

Measurement Accuracy

Turbidity (TRB): Up to 1,000 FNU/NTU: 5% of measured value
±0.01 FNU/NTU

Reproducibility

Turbidity (TRB): <3%
Solids (TS): <4%

Response Time

1 s < T₉₀ < 300 s (adjustable)

Calibration

Turbidity (TRB): Factory calibrated
Solids (TS): To be calibrated by customer on site
Zero point: Permanently calibrated in the factory

Pressure Range

<6 bar: TSS W sc
<10 bar: TSS sc, TSS HT sc, TSS TITANIUM2 sc, TSS TITANIUM7 sc
<16 bar: TSS VARI sc, TSS XL sc

Flow Rate

3 m/s maximum

Ambient Temperature

0 to 50°C: TSS W sc
0 to 60°C: TSS sc, TSS TITANIUM2 sc, TSS TITANIUM7 sc
0 to 80°C: TSS VARI sc, TSS XL sc
0 to 90°C: TSS HT sc

Dimensions

Tank sensor:
D x L 40 mm x 330 mm
Inline sensor (TriClamp):
D x L 40 mm x 332 mm
TSS VARI sc, TSS XL sc:
D x L 40 mm x 232 mm

Weight

Tank sensor, inline sensor (TriClamp):
Approx. 1.6 kg
TSS VARI sc, TSS XL sc:
Approx. 1.5 kg

*Subject to change without notice.

Suspended Solids & Turbidity: TSS Portable



Hand-held turbidity, suspended solids and sludge blanket level instrument.

- Three parameters in one instrument
- Multiple calibration curves for convenience
- Air bubble compensation for accuracy
- Easy sludge blanket levels
- Durable materials for long life
- Rechargeable battery power

The Hach TSS Portable Hand-held Turbidity, Suspended Solids, and Sludge Blanket Level Instrument is ideal for remote monitoring in municipal and industrial wastewater, drinking water, and river monitoring. This instrument can be used as an optimization tool for monitoring processes or as an easy way to calibrate or validate online sensors.

NEW!

Specifications*

Measurement Principle

Combined multi-beam alternating light method with infrared diode system

Turbidity: 2-channel 90° scattered light measurement in accordance with DIN EN 27027/ISO 7027; additional measured value verification by six-channel multiple angle measurement

Suspended Solids: modified absorbance measurement, six-channel multiple angle measurement

Range

Turbidity: 0.001 to 4000 NTU

Suspended Solids: 0.001 to 400 g/L (1 to 400,000 mg/L) (upper range depending on sample characteristics)

Accuracy

Turbidity: less than 3% or ± 0.02 NTU, whichever is greater

Suspended Solids: less than 4% or ± 0.001 g/L whichever is greater

Resolution

Turbidity: 0.001 at 0 to 0.999 NTU; 0.01 at 1 to 9.99 NTU; 0.1 at 10 to 99.9 NTU; 1 at greater than 100 NTU

Suspended Solids: 0.001 at 0 to 0.999 g/L; 0.01 at 1 to 9.99 g/L; 0.1 at 10 to 99.9 g/L; 1 at greater than 100 g/L

Units of Measure

Turbidity: NTU, FNU, EBC

Suspended Solids: ppm, mg/L, g/L, %

Operating Modes

Single, interval, or continuous measurement

Display

24 mm (0.95 in.) high LCD graphic display; UV treated; alphanumeric 4 lines of 16 characters each

Operating Temperature

0 to 60°C (32 to 140°F)

Operating Pressure

0 to 10 bar (0 to 145 psi)

Relative Humidity

0 to 95% relative humidity

Power Requirements

Meter: 6 rechargeable NiMH batteries (recommended 1.2 V/min. 1800 mAh) or 6 "AA" standard batteries

Plug-in Charger: 115/230 Vac, 50/60 Hz

Sensor Cable Length

10 m (32.8 ft.)

Meter Enclosure Rating

IP55

Probe Enclosure Rating

IP68

Current Input

Approx. 60 mA

Wetted Materials

Probe: stainless steel

Sensor Window: sapphire

Internal Data Memory

For up to 290 measured values

Weight

Meter: 0.6 kg (1.2 lb.)

Probe: 1.6 kg (3.5 lb.)

Dimensions

Meter: 110 x 230 x 40 mm (4.3 x 9.1 x 1.6 in.)

Probe: 290 x 40 mm (11.4 x 1.6 in.)

Case: 320 x 450 x 110 mm (12.6 x 17.7 x 4.3 in.)

Warranty

2 years

**Subject to change without notice.*

Primary Applications

- Wastewater
- Drinking water
- Industrial Water

Prod. No.

LXV322.99.00002

Description

Complete TSS Portable Hand-held Turbidity, Suspended Solids, and Sludge Blanket Level System; includes meter, probe, rechargeable batteries, charger for rechargeable batteries with four plug adapters, manual, quick start guide and carrying case.

REPLACEMENT PARTS

LXV320.99.00002

TSS Portable Hand-held Turbidity, Suspended Solids, and Sludge Blanket Level Meter only

LXV321.99.00002

TSS Turbidity, Suspended Solids, and Sludge Blanket Level Probe only; with 10 m (32.8 ft.) cable and plug

LZY607

Charger; for rechargeable batteries; includes 4 plug adapters (for Spain, United States, Great Britain, Hong Kong, Malaysia, Singapore, Australia, New Zealand, and China)

LZY606

Battery Holder

LZY604

Rechargeable NiMH Batteries; qty. 6

LZY605

Hard-sided Instrument Carrying Case; with handle, empty

For more information, call to request Literature #2634 or visit www.hach.com

Suspended Solids & Turbidity: Tx-Pro™-2

Economical suspended solids measurement without sacrificing accuracy.

- Reliable construction with advanced diagnostics
- Simple installation and calibration
- Economical to own and operate
- Application experience you can rely on
- Easy-to-install mounting kit

Economical and Durable

The TxPro™-2 is an economical solution for the cost conscious operator. A durable construction will weather all your application demands without sacrificing response time or accuracy.

TxPro-2 Controller Operation

Two probe channels, individually configured via RS485 communication ports are standard in every controller. Measuring ranges and operating principles depend on the probe, see relevant probe specifications. TxPro-2 is compatible with either one or two Series 200 RD Suspended Solids probes.



Process Instruments

Primary Applications

- Wastewater
- Drinking water
- Industrial Water

The Hach TxPro™-2 Suspended Solids and Turbidity Controller is supplied with the controller, mounting hardware, and user manual. Ask your sales representative for loop pricing on combinations.

Prod. No.	Description
INDIVIDUAL CONTROLLER	
5855000	TxPro-2 controller only, (115 or 230V)
6001-2400-33	RD-240 immersion probe, 0-10 g/L
6001-2420-00	RD-242 insertion probe, 0-10 g/L
6001-2600-33	RD-260 immersion probe, 0-25 g/L
6001-2620-00	RD-262 insertion probe 0-25 g/L
ACCESSORIES	
971	Power Cord, US
2220	Power Cord, European
6021-0020	Ball valve, Insertion

Specifications*

Control Interface

Menu-driven software, Multi-point calibration, programmable intervals for cleaning, range and relay / output assignments.

Measurements

Two probe channels, individually configured via RS485 communication ports are standard in every controller. Measuring ranges and operating principles depend on the probe, see relevant probe specifications. TxPro-2 is compatible with either one or two Series 200 RD Suspended Solids probes.

Operating Conditions

Temperature range for continuous operation: -20 to 55°C (-4 to 131°F)

Recorder Output

Two scalable 0/4-20 mA dual range outputs, galvanically isolated from controller; 800 Ohm maximum load

Relay Output

Three alarm relays, 2 A @ 250 Vac or 0.5 A @ 100 Vac, N.O. or N.C.; user-configurable One purge timer relay, 2 A @ 250 Vac or 0.5 A @ 100 Vac, N.O. or N.C.; user configurable

Reading Update

Every 0.5 second

Signal Averaging

User adjustable from 1 second to 5 minutes

Power Requirements

Auto-ranging 90-265 Vac, 50/60 Hz
Maximum power consumption: 25 VA

Controller Enclosure

Enclosure: polyester-coated aluminum; NEMA 4X (-IP66)

Weight

2.3 kg (5 lb)

Universal mounting bracket accommodates up to 50 mm (2 in) diameter pipe

Complies with CE, UL and CSA requirements

Controller Dimensions

144x144x150 mm
(5.6x5.6x5.85 inches)

**Subject to change without notice.*

For more information, visit www.hach.com

Find it here... Buy it today on www.hach.com

U.S. customers only.



TOC: BioTector TOC Analyzers



NEW!

Primary Applications

- Industrial Water
- Food & Beverage
- Pharmaceutical
- Airports
- Chemical / Petrochemical / Refining
- Wastewater
- Pulp & Paper
- Mining

For more information,
call to request Literature #2681
or visit www.hach.com

Designed to provide low maintenance, online TOC monitoring even in the most difficult sample applications.

- Low maintenance—6 month service intervals
- High reliability—99.7% uptime
- Self-cleaning technology—prevents clogging and sample contamination and ensures measurement accuracy
- Measure clean and dirty water—analysis without filtering (including fats, oils, greases, chlorides, sludge, and particulates)
- Ability to handle up to 30% chlorides
- Very low cost of ownership—lowest of any TOC analyzer on the market
- Guaranteed to handle the most demanding applications

Patented Self-Cleaning Oxidation

The BioTector's patented self-cleaning oxidation technology can reliably and continuously measure TOC in samples containing salts, particulates, fats, oils and greases. Through the use of Two-Stage Advance Oxidation process (TSAO), the BioTector TOC Analyzer fully oxidizes unfiltered samples providing accurate, reliable and continuous measurement. The entire system is automatically self-cleaned by the reaction process during every cycle, preventing clogging and dirt build up, resulting in extremely low maintenance.

Built for Purpose

The BioTector is designed to analyze everything—from clean water to the most corrosive and polluted samples, without sample filtering. Constructed using robust materials such as stainless steel, hastelloy, teflon, neoprene and kalrez, providing long term durability suitable to withstand a wide variety of corrosive and toxic process fluids, often encountered in the online environment.

How To Order

Contact your local Hach sales representative to configure a TOC analyzer for your application.

Available Accessories

- Total Nitrogen Measurement Option
- Total Phosphorus Measurement Option
- Vacuum Samplers
- Multi-stream (up to 6 streams)
- Outdoor Weatherproof Model
- Outdoor Weatherproof Analyzer Shelters
- Hazardous Area Certified Model



Specifications*

Oxidation Method

Patented Two-Stage Advanced Oxidation Process using Hydroxyl Radicals.

TOC Measurement

NDIR measurement of CO₂ after oxidation.

Measured Components

TOC, TIC, TC, VOC/POC, TOC as TC-TIC
After Correlation: COD, BOD

Cycle Time

TOC < 6.5 minutes

Monitoring Ranges

Ultra Low: 0-500 µg C/L up to 0-5000 µg C/L
Low:** 0-5 mg C/L up to 0-1,250 mg C/L
Standard:** 0-10 mg C/L up to 0-10,000 mg C/L
High:** 0-15 mg C/L up to 0-15,000 mg C/L
Ultra High:** 0-20 mg C/L up to 0-100,000 mg C/L

**3 ranges configurable

Exceedence Tracking

Records Full Tracking to Maximum Range

Repeatability

Ultra Low: ±3% of reading or ±5 µg C/L
All Others: ±3% of reading or ±0.3 mg C/L,
with automatic range selection

Detection Limit

Ultra Low: 10 µg C/L
All Others: 0.6 mg C/L,
with automatic range selection

Sample Volume

Up to 14.0 mL

Sample Inlet Pressure

Typically ambient (for applications with high sample pressure, sampling systems are available)

Drain Pressure

Typically ambient (for applications with high drain pressure, optional systems are available)

Sample Inlet Temperature

2 to 60°C (36 to 140°F)

Sample Flow Rate

Minimum 100 mL/min per sample

Sample Particle Size

Up to 2 mm, soft particulates

Ambient Temperature

5 to 40°C (41 to 104°F)

Humidity

5% - 85%, non-condensing

*Subject to change without notice

See pages 192-193 for reagents, test kits, and accessories for measuring TOC in the lab or field.



TOC: BioTector TOC/TN/TP Analyzers

Reliable TOC/TN/TP measurements for online applications.

- Online TOC, TN, TP measurements combined in one instrument eliminating the need for individual analyzers
- Configurable as TOC/TN, TOC/TP or TOC/TN/TP
- Low maintenance—6 month service interval
- High reliability—99.7% uptime
- Available with up to 6 streams
- Configurable for real online COD/BOD measurement

Combined TOC/TN/TP Operation

The BioTector TOC/TN/TP analyzer utilizes the unique, self cleaning benefits of its patented Two Stage Advanced Oxidation (TSAO) process to extend the measured parameters to include Total Nitrogen and/or Total Phosphorous. The powerful TSAO process provides complete oxidation of all sample constituents and produces an oxidized liquid sample ready for further analyses. The TOC measurement process (infrared measurement of CO₂ gas) liberates all carbonates, which are known interferences in TN & TP analysis, allowing for reliable and accurate measurements of Total Nitrogen and Total Phosphorous using standard Direct UV and Colorimetric methods respectively.

Advantage of a Combined Measurement

While combining TOC, TN, and TP measurements in one analyzer provides obvious cost saving benefits in relation to installation, sampling and maintenance, it is the use of the BioTector's single oxidation process for all measurements that truly sets this analyzer apart. The powerful Two Stage Advanced Oxidation process actually cleans the liquid sample and removes any contaminants before it is passed into the more delicate TN and TP analysis sections. This process, along with the build quality and natural self cleaning properties of TSAO, provides long term durability suitable to withstand a wide range of applications and environments.



NEW!

Process Instruments

How To Order

Contact your local Hach sales representative to configure a TOC analyzer for your application.

Available Accessories/Options

- Vacuum Samplers
- Multi Stream (up to 6 Streams)
- Outdoor Weatherproof Model
- Hazardous Area Certified Model
- Oxygen Concentrators and Generators



Primary Applications

- Industrial Water
- Wastewater
- Pulp & Paper
- Pharmaceutical
- Chemical / Petrochemical / Refining

Specifications*

Parameters

TOC, TIC, TC, VOC/POC
TOC as TC-TIC, COD[†], BOD[†]

Measurement Method

TOC—Infrared measurement of CO₂ after oxidation by TSAO

Measuring Range

Low: 0-5 mg C/L up to 0-1,250 mg C/L
Standard: 0-10 mg C/L up to 0-10,000 mg C/L
High: 0-15 mg C/L up to 0-15,000 mg C/L
Ultra High: 0-20 mg C/L up to 0-100,000 mg C/L
3 ranges configurable

Response Time

TOC 6.5 minutes

Repeatability

±3% of reading or ±0.3 mg C/L, with automatic range selection

[†]COD & BOD by correlation algorithm incorporating TOC, TN and/or TP measured results

Parameter

TN

Measurement Method

Direct UV measurement of Nitrate after oxidation

Measuring Range

Low: 0-5 mg N/L up to 0-1,250 mg N/L
Standard: 0-10 mg N/L up to 0-10,000 mg N/L
High: 0-15 mg N/L up to 0-15,000 mg N/L
Ultra High: 0-20 mg N/L up to 0-100,000 mg N/L
3 ranges configurable

Response Time

TOC + TN Typically 7 minutes

Repeatability

±3% of reading or ±0.3 mg N/L, with automatic range selection

Parameter

TP_R (Total Reactive & Organic Phosphorous)
TP

Measurement Method

Colorimetric Measurement of Phosphate using Standard Vanadomolybdophosphoricacid Method after oxidation

Measuring Range

Low: 0-5 mg P/L up to 0-1,250 mg P/L
Standard: 0-10 mg P/L up to 0-10,000 mg P/L
High: 0-15 mg P/L up to 0-15,000 mg P/L
Ultra High: 0-20 mg P/L up to 0-100,000 mg P/L
3 ranges configurable

Response Time

TOC + TN + TP_R Typically 8 minutes
TOC + TN + TP Typically 20 minutes

Repeatability

±3% of reading or ±0.3 mg P/L, with automatic range selection

^{*}Subject to change without notice.

See pages 192-193 for reagents, test kits, and accessories for measuring TOC in the lab or field.

Find it here... Buy it today on www.hach.com
U.S. customers only.



TOC: 1950Plus TOC Analyzer

On-line TOC for drinking water application.



- Intelligent software reports pass/fail status for TOC removal percentage
- Complies with Standard Methods 5310 C and EPA Method 415.1
- Dual stream sample system for source and distribution water
- Grab sample analysis capability for immediate manual TOC measurements
- Available in ranges of 0-5, 0-10, and 0-25 mg/L
- Tolerant to changes in sample composition, pH, and temperature

Principle of Operation

The 1950plus TOC analyzer uses a multi-staged UV oxidation reactor and a chemically impervious non-dispersive infrared (NDIR) CO₂ detector system assuring full compliance with Standard Methods 5310 C and EPA method 415.1.

How To Order

Contact your local Hach sales representative to configure a TOC analyzer for your application.

For more information, call to request Literature #4372, or visit www.hach.com



Source Water Total Organic Carbon (mg/L)	Source Water Alkalinity		
	0-60 mg/L as CaCO ₃	> 60-120 mg/L as CaCO ₃	> 120 mg/L as CaCO ₃
Percent Removal Required			
> 2.0 – 4.0	35	25	15
> 4.0 – 8.0	45	35	25
> 8.0	50	40	30

Primary Applications

- Drinking Water

Specifications*

Range
Note: Must specify range at time of order.
0-5 / 10 / 25 mg/L TOC

Process Control Range
0-100% TOC Removal

Accuracy
± 2% of full scale at 25°C (77°F)

Repeatability
± 2% of reading at 25°C (77°F)

Minimum Detection Limit
≤ 0.015 mg/L for range 0-5 mg/L at 25°C (77°F)

Response Time
T90 ≤ 8 minutes

Inlet Pressure
0.15-6 bar (2-87 psig)

Flow Rate
20-200 mL per minute

Sample Temperature Range

2 to 70°C (36 to 158°F)

Operating Temperature Range

5 to 40°C (41 to 104°F)

Recorder Outputs

Two 4-20 mA with an output span based on the selected measurement range and the TOC removal percentage process control range

Alarms

Five alarms selectable for sample concentration alarm, analyzer system warning or analyzer system shutdown alarm.

Each is equipped with an SPDT relay with contacts rated for 3A resistive load at 250 Vac

Serial Communication

One multi-function RS232 serial port (ANSI 3.28 MODBUS®, CSV)

Power

115/230 Vac 50/60 Hz (switch selectable), 500 VA maximum

Sample Inlet/Outlet Connection

1/4-inch OD tube, compression fitting

Drain Connection

1 1/2-inch OD standard drain pipe

Carrier Gas

1/8-inch OD tube, compression fitting
Clean, CO₂ free air or Nitrogen at 2.8-6.2 bar (40-90 psig)

Compliance/Certification

UL/CSA, CE approved
Standard Methods 5310 C
EPA 415.1

**Subject to change without notice.*

See pages 192-193 for reagents, test kits, and accessories for measuring TOC in the lab or field.



TOC: astroTOC™ UV TOC Analyzer

On-line TOC fit for industrial process water and wastewater.

- Industrial design withstands severe conditions
- Advanced diagnostics
- Flexible analysis system allows analysis of high salt and hard-to-oxidize samples
- Based on proven Astro process TOC analyzer platform
- Drift and interference-free NDIR detector

Automatic Calibration, Validation, and Cleaning

Set up the astroTOC UV for automatic zero, and span calibration, single-point validation (system check), and analyzer cleaning. A system validation references the calibration against a known standard assuring an accurate measurement of the samples. Automatic cleaning simplifies analyzer maintenance.

Principle of Operation

The astroTOC UV is a rugged, ultra-low maintenance analyzer for continuous monitoring of TOC in industrial process control monitoring and municipal/industrial wastewater treatment applications. The analyzer combines chemical and ultraviolet oxidation techniques in a low temperature reactor to deliver direct TOC measurements.

How To Order

Contact your local Hach sales representative to configure a TOC analyzer for your application.

For more information, call to request Literature #2432, or visit www.hach.com



Process Instruments



Primary Applications

- Wastewater
- Industrial Water

Specifications*

Range

Note: Must specify range at time of order.

0-5 up to 20,000 mg/L TOC

Accuracy

± 2% of full scale, non-diluted ranges at 25°C (77°F)

± 4% of full scale, diluted ranges at 25°C (77°F)

Repeatability

± 2% of reading, non-diluted ranges at 25°C (77°F)

± 4% of reading, diluted ranges at 25°C (77°F)

Minimum Detection Limit

≤ 0.015 mg/L for range 0-5 mg/L
at 25°C (77°F)

Response Time

T90 ≤ 8 minutes (includes TIC sparging)

Inlet Pressure

0.15-6 bar (2-87 psig)

Flow Rate

20-200 mL per minute

Sample Temperature Range

2 to 70°C (36 to 158°F)

Operating Temperature Range

5 to 40°C (41 to 104°F)

Recorder Outputs

Two 4-20 mA analog outputs selectable for sample concentration, analyzer system warning or auto range indication

Alarms

Five alarms selectable for sample concentration alarm, analyzer system warning or analyzer system shutdown alarm

Each is equipped with an SPDT relay with contacts rated for 3A resistive load at 250 Vac or 0.5A at 30V

Serial Communication

One multi-function RS-232 or RS-485 optional serial port (MODBUS®, CSV)

Power

115/230 Vac 50/60 Hz (switch selectable),
300 VA maximum

Sample Inlet/Outlet Connection

1/4-inch OD tube, compression fitting

Drain Connection

1 1/2-inch OD standard drain pipe

Carrier Gas

1/8-inch OD tube, compression fitting
Clean, CO₂ free air or Nitrogen at 2.8-6.2 bar
(40-90 psig)

Compliance/Certification

UL/CSA, CE approved
Standard Methods 5310 C, EPA 415.1

**Subject to change without notice.*

See pages 192-193 for reagents, test kits, and accessories for measuring TOC in the lab or field.

Find it here... Buy it today on www.hach.com

U.S. customers only.



TOC: astroTOC™ UV Turbo TOC Analyzer

Fast and accurate low level TOC analysis without interferences.



- Response time less than 5 minutes with 100% oxidation
- Sample composition and oxidation by-products do not interfere
- Uses proven NDIR technology with supreme accuracy at low levels
- Advanced diagnostics and features designed for ease of use

TOC Analysis for Chemical/Petrochemical and Power Generation Condensate Water (Cogeneration)

The astroTOC UV TURBO removes the TIC from the sample, so it only measures true TOC as described by ASTM, EPA, ISO, and Standard Methods.

The astroTOC UV TURBO Analyzer combines chemical and ultraviolet oxidation techniques in a low-temperature reactor to deliver direct TOC measurements. It uses a multi-staged UV oxidation reactor and a chemically impervious non-dispersive infrared (NDIR) CO₂ detector system, assuring full compliance with Standard Methods 5310 C and EPA method 415.1.

How To Order

Contact your local Hach sales representative, to configure a TOC analyzer for your application.

For more information, call to request Literature #2439, or visit www.hach.com

Primary Applications

- Industrial Water
- Pure Water/Power

Specifications*

Range

0-2000 µg/l (0-2.000 mg/L),
0-5000 µg/l (0-5.000 mg/L),
0-10,000 µg/l (0-10.000 mg/L),
0-25,000 µg/l (0-25.000 mg/L),
0-50,000 µg/l (0-50.000 mg/L)

Accuracy/Repeatability/Linearity

≤ ± 4 % of reading or 8 µg/L (whichever is greater) at 25° C (77° F)**

**Performance specifications established with range configuration 0-5000 µg/L (0-5 mg/L)

Minimum Detection Limit

≤ 5 µg/L for range 0-5000 µg/L at 25°C (77°F)***

***MDL established per EPA Appendix B to part 136

Response Time

T90 ≤ 5 minutes

T20 ≤ 3 minutes

(includes TIC sparging)

Inlet Pressure

0.15-6 bar (2-87 psig)

Flow Rate

25-200 mL/minute

Sample Temperature Range

2° to 70°C (36° to 158°F)

Extended Inlet Temperature

2-100°C (212°F) with a 3000 mm (120 in) long, 6 mm (1/4 in) O.D. stainless steel sample inlet tube at a flow rate of 25-60 mL/minute.

Operating Temperature Range

5° to 40°C (41° to 104°F)

Recorder Outputs

Two 4-20 mA analog outputs selectable for sample concentration, analyzer system warning or auto range indication

Alarms

Five relays selectable for sample concentration alarm, analyzer system warning or analyzer system shutdown alarm. Each is equipped with an SPDT relay with contacts rated for 3A resistive load at 250 Vac or 0.5A at 30V.

Optional Serial Communication

One multi-function RS232 or RS485 optional serial port (MODBUS®, CSV)

Power

115/230 Vac 50/60 Hz (switch selectable)

300 VA maximum

Sample Inlet/Outlet Connection

1/4-inch OD tube, compression fitting

Samples

Single stream, fast loop inlet (optional: Dual-stream)

Drain Connection

1 1/2-inch OD standard drain pipe

Drain Pressure

ambient

Carrier Gas

1/8-inch OD tube, compression fitting Clean, CO₂-free air or Nitrogen at 2.8-6.2 bar (40-90 psig)

Compliance/Certification

CE certified, listed to UL and CSA safety standards by ETL Standard Methods 5310 C, EPA 415.1

Enclosure

Cold Rolled Steel epoxy powder coated, IP66/NEMA 4
Optional Stainless Steel, IP66/NEMA 4

Dimensions

Approximately 981 mm (38.6 inches) tall, 675 mm (26.6 inches) wide, 220 mm (8.7 inches) deep

Mounting

Wall mount

Shipping Weight

120 lbs. (54 kg)

*Subject to change without notice.

See pages 192-193 for reagents, test kits, and accessories for measuring TOC in the lab or field.