Prod. No.

CONTROLLER REQUIRED

For information about Hach digital and analog controllers, see pages 385-396.

PHD sc DIGITAL DIFFERENTIAL pH/ORP SENSORS

All digital sensors include built-in digital electronics and integral 10 m (33 ft.) cable terminated with connector for a digital controller. Body styles:

- *Convertible – 1-inch NPT threads at both ends, designed for tee-mounting or other flow through mountings, and pipe mounting for immersion*
- *Insertion – no threads on the electrode end, designed for use with insertion valve assembly or flow-through cell*
- *Sanitary – 2-inch flange for a tri-clover style fitting*
- *Immersion – used with chain mounting or pipe mounting*

pH Sensors

	Body Material	Body Style
DPD1P1	PEEK[1]	Convertible
DPD1P3[3]	PEEK[1]	Convertible
DPD2P1	PEEK[1]	Insertion
DPD3P1	PEEK[1]	Sanitary
DPD1R1	Ryton[2]	Convertible
DPD1R3[3]	Ryton[2]	Convertible
DPS1	Stainless Steel	Immersion

ORP Sensors

	Body Material	Body Style
DRD1P5	PEEK[1]	Convertible
DRD1P6	PEEK[1]	Convertible
DRD2P5	PEEK[1]	Insertion
DRD1R5	Ryton[2]	Convertible
DRD1R6	Ryton[2]	Convertible
DRS5	Stainless Steel	Immersion

PHD sc ANALOG SENSORS

pH Sensors

	Body Material	Body Style
PD1P1	PEEK[1]	Convertible
PD1P3	PEEK[1]	Convertible
PD2P1	PEEK[1]	Insertion
PD3P1	PEEK[1]	Sanitary
PD1R1	Ryton[2]	Convertible
PD1R3[3]	Ryton[2]	Convertible

ORP Sensors

	Body Material	Body Style
RD1P5	PEEK[1]	Convertible
RD1P6	PEEK[1]	Convertible
RD2P5	PEEK[1]	Insertion
RD1R5	Ryton[2]	Convertible
RD1R6	Ryton[2]	Convertible

[1]Polyetheretherketone; [2]Polyphenelene Sulfide; [3]HF resistant glass

DIGITAL GATEWAY

6120500 Use the Digital Gateway to connect pHD analog sensors to a Hach digital controller.

Prod. No.

PHD sc DIGITAL AND PHD ANALOG SENSOR ACCESSORIES

Cables

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

6122400 Digital Extension Cable, 1 m (3.2 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.)

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

1W1100 Analog Interconnect Cable, order per foot

Digital Termination Box

Required when the length of cable 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

Analog Junction Box

Required when the length of cable between the analog sensor and analog controller is greater than 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)

pHD sc Digital and pHD Analog Sensor Reagents and Standards

25M1A1025-115 Standard Cell Solution, to replenish standard cell chamber in Hach pHD sensors while replacing salt bridge, 500 mL
25M8A1002-101 Gel Powder, for >95°C applications, 2 g

pH Buffers

	Description	Volume
2283549	pH 7	500 mL (1 pint)
2283449	pH 4	500 mL (1 pint)
2283649	pH 10	500 mL (1 pint)

ORP Reference Solutions (in resealable plastic bottles)

	Description	Volume
25M2A1001-115	200 mV	500 mL (1 pint)
25M2A1002-115	600 mV	500 mL (1 pint)

pH/ORP systems with Class I Division II safety classification are available— please contact your Hach representative.

For additional information and available mounting hardware options, call Hach or download product data sheet (Lit. #2467) from www.hach.com/ProcesspHSensors.

Visit pages 27-52 for information on Hach laboratory and field pH instruments and chemistries.

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

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

- *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.

Platinum ORP
(Gold ORP also available)

Antimony Sensor

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.

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)

**Subject to change without notice.*

Visit pages 27-52 for information on Hach laboratory and field pH instruments and chemistries.

Principal of Operation

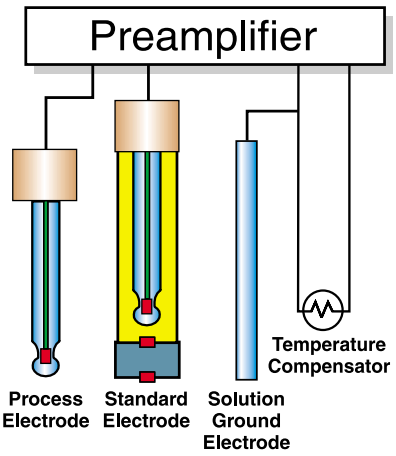
Hach's unique Differential Sensor Technology uses three measuring electrodes instead of the two in conventional pH sensors. The process electrode and standard electrode measure the pH differentially with respect to a third ground electrode.

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 443.



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.

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, call Hach or download product data sheet (Lit #G110) from www.hach.com/ProcesspHSensors

Visit pages 27-52 for information on Hach laboratory and field pH instruments and chemistries.

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

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

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.*

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 Ryton® 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.

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

Visit pages 27-52 for information on Hach laboratory and field pH instruments and chemistries.

CONTROLLER REQUIRED

For information about Hach digital and analog controllers, see pages 385-396.

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)
1W098 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

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.

Visit pages 27-52 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.

Unmounted version available.
Call Hach for ordering information.

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.

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.*

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 388-391.

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

Visit pages 27-52 for information on Hach laboratory and field pH instruments and chemistries.

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 Regenerateable Differential pH and ORP Sensor–1 inch
60-9765-000-001[2]	LCP Salt Bridge, Kynar (PVDF) Outer junction For use with Regenerateable 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 Regenerateable 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 for Regenerateable Encapsulated LCP or Ryton Differential pH and ORP Sensors–1-1/2 inch

[1]PEEK body material salt bridges must be used with PEEK body material sensor
[2]LCP 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.

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 27-52 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 PO_4-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.

Primary Applications

- **Wastewater**
- **Industrial Water**

*Specifications**

Measurement Method
Photometric method using vanado-molydan

	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 sc1000 Multi-parameter Universal Controller
(see Hach Lit. #2403)

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.*

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 sc1000 Digital Controller.
See pages 388-389 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

See pages 177-178 for reagents, test kits, and accessories for measuring phosphate in the lab or field.

HACH® Be Right™

800-227-4224
Outside the United States, call 970-669-3050

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.

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)
MANUALS	
6000118	Series 5000 High Range Phosphate Analyzer Manual
6000518	Series 5000 Low Range Phosphate Analyzer Manual

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

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.*

See pages 177-178 for reagents, test kits, and accessories for measuring phosphate in the lab or field.

Recording: Partlow Circular Recorder

Designed with the latest innovation in recording technology, enclosures, and functionality.

- *4-digit display*
- *Universal sensor inputs: thermocouple, 3-wire RTD, or DC linear (mA, mV, V)*
- *Two programmable alarms per pen*
- *Chart speeds: 8, 12, 24, and 48 hours—or 7 days*
- *Disposable fiber-tipped pens: red and green*
- *90 to 264V AC powered*

The MRC 5000 is slim, trim, and simple. Finding a place to install this recorder is easy, with its compact 2.5" panel depth and short 1.3" protrusion from the front of the panel. It can be panel or surface mounted. The cutout size for the MRC 5000 is the commonly utilized 12.7" square cutout.

A simple prompting scheme provides rapid access to all configuration data. Programming is simple enough that instructions are provided on a 4" x 6" card that can be stored in a pocket on the back of the wiring access panel. During normal operation, the display can show process value(s) or be blanked.

The MRC 5000 is housed in an injection molded Noryl enclosure which can be panel or surface mounted. Mounting brackets accompany the unit. Its design allows it to fit into the panel cutout of competitive products.

The Partlow 10-inch round circular recorder is available in either a single- or dual-pen configuration and field selectable rotation (24-hour or seven-day). Green and red replacement pens, two-sided 0 to 100 linear charts.

Prod. No.	Description
2843000	10-inch round chart recorder, single pen, CE approved, 120/240 Vac, 50/60 Hz
2842900	10-inch round chart recorder, dual pen, CE approved, 120/240 Vac, 50/60 Hz
2836400	Red replacement pens, 5/pk
2843200	Green replacement pens, 5/pk
2836500	24 hour, 0-100 replacement paper, 100/pk
2843100	7 day, 0-100 replacement paper, 100/pk

HACH® Be Right™

800-227-4224
Outside the United States, call 970-669-3050

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.

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)

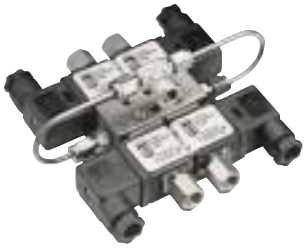
Sample Delivery Hose Options
2 m (unheated)
10 m (heated)
20 m (heated)

**Subject to change without notice.*

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 ETLC 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 ±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	
2627904	Manifold Sample Valve Assembly, four sample
2627908	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
EXTRA MANUALS	
2627988	Manual, Sample Manifold
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
3029100	U.S. style heavy duty power cord for 48685-00

Prod. No.	Description
4868502	Sample Heater for Series 5000 Analyzer, 220 Vac *For more information, request Lit. #2502.*
1757700	Sample Cooler
4598300	Stainless Steel Sample Pressure Conditioning Kit *For more information, request Lit. #1317.*
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 6 and Surface Scatter Turbidimeters

HACH® Be Right™

800-227-4224
Outside the United States, call 970-669-3050

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.

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
2627904	4-sample Valve Assembly
2627908	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 ± 20.7 kPa)
Flow rate from 100 to 300 mL/min
Sample temperature between 5 and 50ºC
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 181-182 for reagents, test kits, and accessories for measuring silica in the lab or field.

Sludge Level: SONATAX sc Probe

Low-maintenance sludge level monitor delivers superior accuracy.

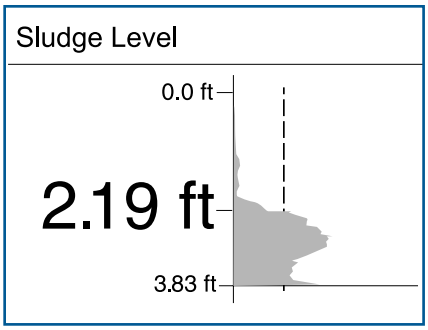
SONATAX sc probes can be connected to an sc1000 or sc100 controller. See pages 388-391 for more information on Hach sc controllers.

Ask About Our Service Programs
See page 15.

- *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.

Primary Applications

- **Wastewater**
- **Drinking Water**
- **Industrial Water**

*Specifications**

Measuring Principle
Ultrasonic measurement

Range
0.2 to 12 m (0.6 to 40 ft.)

Resolution
0.03 m (0.09 ft.)

Accuracy
±0.1 m (±0.33 ft.)

Operating Temperature
>0 to 50°C (>32 to 122°F)

Power Requirement
12 V, 2.4 W

Measurement Interval
10 to 1,800 seconds (adjustable)

Probe Mounting
Fixed location or pivot assembly

Calibration
Factory calibrated

Probe Construction
Wiper: Silicon
Body: Stainless steel
Face: Polyoxymethylene

Certifications
CE certified to EN 61326-1:1998 /A1/A2/A3 & EN 61010-1:2001

Dimensions
130 x 185 mm (5 x 7.3 in.)

Weight
3.5 kg (7.7 lbs.)

**Subject to change without notice.*

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 clarifers with skimmers)
LZX414.00.73000	Rail Mount kit for probe (rail mount must be ordered with either LZX414.00.70000 or LZX414.00.71000)
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 LZX414.00.70000 or LZX414.00.7100)
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

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800-227-4224
Outside the United States, call 970-669-3050

Low-level sodium measurement in high purity water.

NEW!

- *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*

Principle of Operation

The 9245 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.

4-20 mA Outputs and Digital Communication Options

Four sets of isolated analog outputs can be configured in 4-20 mA with three outputs assigned to sample concentration or temperature readings and the fourth reporting electrode live signal, including calibration and grab sample. Additional digital communication is available with JBUS/MODBUS or Profibus DP.

Lower Detection Limit of 0.01 ppb

With a detection limit of 0.01 ppb and a range of 0 to 10,000 ppb, the 9245 Sodium Analyzer is ideally suited for monitoring sodium in demineralized water, boiler feed, condensate, and all parts of the steam/water cycle.

Hach 9245 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

UPGRADE OPTIONS

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

CONSUMABLES

09240=A=8000	2-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.

For more information, call to request Literature #2572, or visit www.hach.com

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
180 seconds (t = 90%)

Ambient Temperature
5 to 50°C (41 to 122°F)

**Subject to change without notice.*

See pages 40-45 for reagents, test kits, and accessories for measuring sodium in the lab or field.

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) CO_2 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 Alkalinity		
Source Water Total Organic Carbon (mg/L)	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, CO_2 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 186-187 for reagents, test kits, and accessories for measuring TOC in the lab or field.

HACH® Be Right™

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Outside the United States, call 970-669-3050

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

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 25ºC (77ºF)
± 4% of full scale, diluted ranges at 25ºC (77ºF)

Repeatability
± 2% of reading, non-diluted ranges at 25ºC (77ºF)
± 4% of reading, diluted ranges at 25ºC (77ºF)

Minimum Detection Limit
≤ 0.015 mg/L for range 0-5 mg/L
at 25º C (77º 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 70ºC (36 to 158ºF)

Operating Temperature Range
5 to 40ºC (41 to 104ºF)

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, CO_2 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 186-187 for reagents, test kits, and accessories for measuring TOC in the lab or field.

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, CO_2-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 186-187 for reagents, test kits, and accessories for measuring TOC in the lab or field.

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Outside the United States, call 970-669-3050