

Water Quality

WQ101 Temperature Sensor

Rugged Water Temperature Sensor



Features

- Fully encapsulated electronics
- 4-20 mA output
- Marine grade cable with strain relief

Description

Global Water's WQ101 Temperature Sensor is a rugged and reliable device for highly accurate submersible water temperature measurement. The sensor's probe is molded to 25' of marine grade cable, with lengths up to 500' available upon request. The WQ101 has a two-wire configuration for minimum current draw. The unit's electronics are completely encapsulated in marine grade epoxy within a stainless steel housing.

Applications



Ideal for stream and lake monitoring, aquaculture studies, baseline analyses, mitigation monitoring, and other environmental applications.

Specifications

Output	4-20 mA
Range	-50° to +50°C
Accuracy	±0.2°F or ±0.1°C
Maximum Pressure	Open Water: 0 to 200 psi Online: 50 psi
Operating Voltage	10 to 36 VDC
Current Draw	Same as sensor output
Warm-up Time	5 seconds minimum
Operating Temperature	-50° to +100°C
Size of Probe	Open Water: 3/4" dia. x 4 1/2" long (1.9 cm dia. x 11.4 cm long) Online: 1.7" dia. x 8" long (4.3 cm dia. x 20.3 cm long)
Weight	Open Water: 8 oz (227 g) Online: 9.4 oz (272 g)

Ordering & Options

Order No.	Description	Price
WQ101	Temperature Sensor for Open Water (includes 25' cable)	
WQ101-O	Online Temperature Sensor (with 3/4" NPT thread and 25' cable)	
WQEXC	Extra Sensor Cable, per foot (up to 500')	



WQ201 pH Sensor

Rugged Water pH Sensor

Description

Global Water's WQ201 pH Sensor is a rugged and reliable water pH measuring device. The pH transmitter is mounted on 25' of marine grade cable, with lengths up to 500' available upon request. The sensor's output is 4-20 mA with a three-wire configuration. The WQ201's electronics are completely encapsulated in marine grade epoxy within a stainless steel housing. The unit also uses a removable shield and replaceable pH sensor element for easy maintenance.

Record and Control

As with all of Global Water's 4-20 mA output sensors, you can add recording and control capabilities to the WQ201 with the GL500 Datalogger and the PC300 Control-

Features

- Submersible pH measurements
- Fully encapsulated electronics
- 4-20 mA output
- Marine grade cable with strain relief
- Stainless steel housing
- Replaceable pH element

ler. The GL500 (on page 118) connects to the pH sensor's 4-20 mA output to record data, and the PC300 Controller (on page 132) connects to the sensor's output to control pumps or alarms.

Applications



Ideal for stream and lake monitoring, aquaculture studies, baseline analyses, mitigation monitoring, and other environmental applications.

Specifications

Output	4-20 mA
Range	0 to 14 pH
Accuracy	2% full scale
Maximum Pressure	40 psi
Operating Voltage	10 to 30 VDC
Current Draw	5.5 mA plus sensor output
Operating Temperature	-5° to +55°C
Warm-up Time	3 seconds minimum
Size of Probe	Open Water: 1 1/4" dia. x 10" long (3.2cm dia. x 25.4cm long) Online: 2" dia. x 12" long (5cm dia. x 30.5cm long)
Weight	1 lb (454 g)

Ordering & Options

Order No.	Description	Price
WQ201	pH Sensor for Open Water (includes 25' cable)	
WQ201-O	Online pH Sensor (with 1" NPT thread and 25' cable)	
00-449	pH Sensor Replacement	
WQEXC	Extra Sensor Cable, per foot (up to 500')	

Please call us for calibration standards.

You may also like . . .

695pH Industrial pH Transmitter
 Durable pH transmitter with 4-20 mA output, LCD display, and a protective enclosure.
Page 91

pH-10 Handheld pH Meter
 Handheld meter with LCD display for fast and easy pH measurements.
Page 84

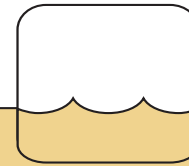
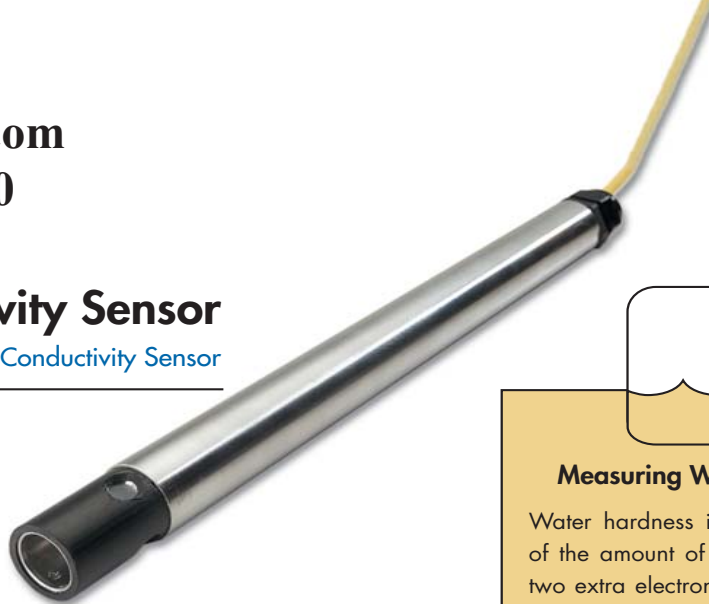
pH3150i Waterproof pH Meter
 Meter with LCD screen that displays pH or mV and temperature.
Page 68

“Whiskey is for drinking; water is for fighting over.”

– Mark Twain

WQ301 Conductivity Sensor

Rugged Water Conductivity Sensor



Description

Global Water's WQ301 Conductivity Sensor is a rugged and reliable water conductivity measuring device. The WQ301 offers a rapid and non-destructive way to measure the ion content in a solution. The conductivity sensor is molded to 25' of marine grade cable, with lengths up to 500' available upon request. The conductivity sensor's output is 4-20 mA with a three wire configuration. The unit's electronics are completely encapsulated in marine grade epoxy within a stainless steel housing.

Record and Control

As with all of Global Water's 4-20 mA output sensors, you can add recording and controlling capabilities to the WQ301 Conductivity Sensor with the GL500 Datalogger and PC300 Controller. The GL500 (on page 118) connects to the conductivity sensor's 4-20 mA output to record data. Global Water's PC300 Controller (on page 132) connects to the conductivity sensor's output to control pumps or alarms.

Specifications

Output	4-20 mA
Ranges	0 to 500, 0 to 2,000, 0 to 5,000, 0 to 10,000, 0 to 20,000, 0 to 40,000 μ S
Accuracy	1% full scale
Maximum Pressure	50 psi
Operating Voltage	12 VDC (\pm 5%)
Current Draw	0.8 mA plus sensor output
Warm-up Time	3 seconds minimum
Operating Temperature	-40° to +55°C
Temperature Compensation	2% per °C
Electrodes	316 stainless steel
Size of Probe	Open Water: 1" dia. x 12" long (3.175cm dia. x 30.5cm) Online: 2.5" dia. x 15.5" long (6.35cm dia. x 39.4cm)
Weight	Open Water: 8 oz (227 g) Online: 22 oz (624 g)

Features

- Fully encapsulated electronics
- 4-20 mA output
- Marine grade cable with strain relief
- Stainless steel housing

Applications



Ideal for stream and lake monitoring, aquaculture studies, baseline analyses, mitigation monitoring, and other environmental applications.

Ordering & Options

Conductivity Sensors for Open Water¹

Order No.	Conductivity Range (μ S)	Price
WQ301A	0 to 5,000	
WQ301B	0 to 10,000	
WQ301C	0 to 20,000	
WQ301D	0 to 2,000	
WQ301E	0 to 40,000	
WQ301F	0 to 500	

1) Sensors include 25' of cable.

Online Conductivity Sensors²

Order No.	Conductivity Range (μ S)	Price
WQ301A-O	0 to 5,000	
WQ301B-O	0 to 10,000	
WQ301C-O	0 to 20,000	
WQ301D-O	0 to 2,000	
WQ301E-O	0 to 40,000	
WQ301F-O	0 to 500	

2) Online sensors include 1-1/4" NPT thread and 25' of cable.

Cable

Order No.	Description	Price
WQEXC	Extra Sensor Cable, per foot (up to 500')	

Please call us for calibration standards.

You may also like . . .

392 Industrial Conductivity Transmitter
 Durable conductivity transmitter with 4-20 mA output and LCD display.

Page 91

CD-30 Conductivity Testers
 Handheld meter for fast and easy conductivity measurements.

Starting on Page 84

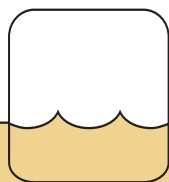
Measuring Water Hardness

Water hardness is the measurement of the amount of ions that have lost two extra electrons (divalent cations) dissolved in a sample. The more divalent cations dissolved in the water the "harder" the water. Generally, the most common divalent cations are calcium and magnesium, however other divalent cations may contribute to water hardness. Water hardness can be expressed in many different units— general conversions are presented starting on page 143.

Total dissolved solids (TDS) refers to a measure of all inorganic solids dissolved in the water, including ions that contribute to water hardness (like calcium) as well as those that do not (like sodium). Water hardness can be roughly calculated from TDS by dividing the ppm (parts per million) measurement of the TDS by 10. This gives a hardness value with an error of only 2-3 French degrees. TDS measurements can also be derived from a relative conductivity measurement.

Conductivity is a measure of the ability of a substance to conduct an electric current. Conductivity increases with increasing ion content, which means that it can provide a good approximation of TDS using the conversion factor of 1 ppm = 2 μ S/cm. Conductivity is temperature sensitive and is typically standardized to 25°C. While conductivity is a convenient way to get an approximation of water hardness, it does have the drawback of combining all ions in the measurement, including those that do not contribute to the water's hardness. This hardness approximation gives an error similar to the TDS measurement of 2-3 French degrees of hardness.

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Using the D-Opto

The D-Opto can be mounted in any orientation; however, we recommend that you face the unit's optical window away from direct sunlight. You can clamp the D-Opto to secure its position, but you should avoid using excessive force. You should also secure the D-Opto's cable along a solid structure to prevent it from trailing in the water.

The standard D-Opto uses SDI-12, a single wire communication protocol that is widely used and provides a simple yet reliable means of transferring data between the instrument and a datalogger. The product manual provides detailed information about how to integrate the D-Opto with your existing SDI-12 telemetry. Alternately, the D-Opto420 converts the SDI-12 signal to a 4-20 mA output for use with dataloggers or process controllers that can receive an analog signal.

When the D-Opto receives a command to take a measurement, the optical circuitry powers on. After five seconds, the D-Opto takes a measurement and then returns its values to the datalogger. The optical circuitry remains powered up so that the D-Opto can respond immediately to another command. The D-Opto's maximum sampling rate is approximately one measurement per second. The optical circuitry remains powered up until no commands are received for six seconds.

The D-Opto returns three data values, in the following order: Temperature (°C); Dissolved oxygen (% Saturation); and Dissolved oxygen (ppm).

D-Opto Optical Dissolved Oxygen Sensor

Highly Accurate and Stable Optical Dissolved Oxygen Sensor

Description

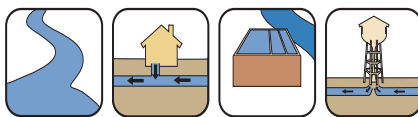
Global Water's D-Opto Optical Dissolved Oxygen Sensor provides long term, accurate, and reliable dissolved oxygen measurements in a variety of liquids. The D-Opto is a major breakthrough in dissolved oxygen monitoring. It was developed to meet the demanding requirements of the environmental monitoring and scientific research sectors. It has also been used successfully in the wastewater industry for over 10 years. The D-Opto uses field-proven solid state optical sensing technology that is highly stable over long periods of time, even in harsh conditions.

The D-Opto has extremely low power requirements. The standard D-Opto version outputs data in SDI-12 format, making it ideal for incorporation into remote environmental monitoring installations. The D-Opto420 version includes a converter for 4-20 mA output.

How it Works

The D-Opto's sensing element uses fluorescence to measure dissolved oxygen, providing accurate dissolved oxygen measurements over long periods of time without the need for recalibration. The unit's sensing element consists of a fluorescing compound suspended stably in a robust optical window. A light source briefly pulses the optical window at a controlled wavelength. The light excites the fluorescent material, causing the material to emit a specific wavelength of light. The intensity of this light is determined by the amount of dissolved oxygen in the water that comes in contact with the optical window. A highly stable and accurate optical sensor circuit inside the D-Opto measures the emitted fluorescence.

Applications



Issues with Other DO Sensors

Traditional galvanic and polarographic dissolved oxygen sensors have been poorly suited for accurate long-term dissolved oxygen monitoring, especially in surface water applications. These sensors measure DO using chemical electrical signatures that are based on a semi-permeable membrane covering electrodes that are immersed in an electrolyte. The semi-permeable membranes and electrolyte require frequent replacement. The sensor electrodes are also subject to deterioration, requiring frequent calibration. In addition, both galvanic and polarographic sensors require constant water flow or they will consume oxygen, causing inaccurate readings. In addition to poor accuracy, these issues result in high upkeep and labor costs.

Stable Components and Operation

Unlike conventional sensors, the D-Opto does not have consumable components that require replacement, thereby minimizing servicing requirements. In addition, the unit has extremely stable electronics and typically requires calibration only once per year.

The D-Opto also does not consume oxygen, and is therefore not affected by water flow. The unit's general construction, including its copper anti-biofoul ring, makes it resistant to pollutants and poisons and highly resilient to bio fouling. Consequently, no stirring is required, and the unit can be deployed in a variety of conditions, including in stagnate groundwater bores.

Variety of Applications

The D-Opto can be used to monitor dissolved oxygen in almost any liquid, includ-

Long and short term monitoring for streams, rivers, lakes, aquaculture, thermocline profiling, industrial outfalls, wastewater, scientific research, homeland security, the food and wine industry, and more.

D-Opto Dissolved Oxygen Sensor

ing a variety of water types, and even wines, beer, and milk. The unit's measurements are not affected by color of the liquid, bubbles, aeration, pollutants, or stagnancy.

Capable D-OptoCom Software

The D-Opto includes Window's™-based software, D-OptoCom, which performs a variety of useful functions. It displays current measurements of percent saturation, ppm, and temperature; enables offset and span calibration to be performed quickly and simply; allows data from the D-Opto to be logged directly to the PC; and features a barometric pressure and altitude correction calculator.

Datalogging and Control

Global Water's GL500 datalogger (see page 118) will add recording capabilities to the 4-20 mA D-Opto. Global Water's PC300 Process Controller (see page 132) can use the 4-20 mA D-Opto to control pumps or alarms.



Features

- Major breakthrough in DO monitoring
- Accurate with good long term stability
- Low maintenance, long calibration interval
- Flow insensitive technology, completely unaffected by water velocity
- Built-in bio-fouling control
- No consumables— long sensor life
- Low power consumption
- Simple to integrate and operate
- SDI-12 or 4-20 mA versions available

Specifications

Output	SDI-12 or 4-20 mA (with converter)
Accuracy	1% of reading or 0.02 ppm, whichever is greater
Resolution	0.01% saturation, 0.001 ppm
Range	0.00 to 25.0 ppm
Repeatability	0.01 ppm
Response Time	90% in less than 60 seconds
Temperature Compensation	Compensated 0 to 50°C
Sensor Drift	Less than 1% per year
Temperature	Accuracy: ±0.1°C Resolution: 0.01°C Range: 0 to 50°C
Depth Rating	Maximum 30m water depth
Operating Voltage	9 to 15 VDC
Current Draw	10 mA during measurement, 0.5mA standby
Sensor Construction	Acetate, stainless steel, cast epoxy
Cable	4 core, 20 AWG, shielded, EPDM jacket
Size	1.89" dia. x 6.17" long (48mm dia. x 156mm long)
Weight	1 lb (453.5 g)



Ordering & Options

D-Opto Transmitters

Order No.	Output Type	Price
D-Opto	SDI-12 w/25ft of cable	
D-Opto420	4-20 mA w/25ft of cable (with converter)	

Accessories

Order No.	Description	Price
4015	SDI-12 to Analog Converter	

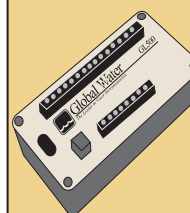
Please call us for calibration standards.

You may also like . . .

PC300 Controller

Use the D-Opto to control pumps or alarms.

Page 132



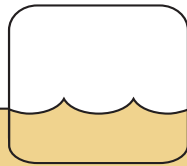
GL500

Add recording capabilities to the D-Opto 420.

Page 118

“Don't empty the water jar until the rain falls.”

– Philippine Proverb



Why Measure DO?

Dissolved oxygen (DO) is the amount of oxygen (O₂) dissolved in water. DO provides one of the best indicators of the health of a water ecosystem, as oxygen is a necessary element for all forms of life, including aquatic life.

Oxygen enters water at the water surface through direct exchanges with the atmosphere. It is also produced as a byproduct of plant and phytoplankton photosynthesis.

A decrease in DO levels is typically associated with an organic pollutant. DO is used by plants and animals for respiration, and by aerobic bacteria in the process of decomposition. When organic matter (such as animal waste or improperly treated wastewater) enters a body of water, algae growth increases. As the plant material dies off and decomposes, dissolved oxygen levels decrease. If the water at the surface is not mixed with deeper water layers, the water's DO levels can become stratified. Dissolved oxygen levels can also vary according to the time of day, weather, and temperature.

DO in water can range from 0-18 parts per million (ppm), but most natural water systems require 5-6 ppm to support a diverse population. As DO levels drop below 5.0 mg/l, aquatic life is put under stress. As dissolved oxygen levels decrease, pollution-intolerant organisms are replaced by pollution-tolerant worms and fly larvae. If oxygen levels fall below 1-2 mg/l for a few hours, large fish kills can result.

WQ401 Dissolved Oxygen Sensor

Rugged Dissolved Oxygen Sensor



Features

- Measure dissolved oxygen in situ
- Fully encapsulated electronics
- 4-20 mA output
- Marine grade cable with strain relief
- Stainless steel housing
- Replaceable dissolved oxygen element

Description

Global Water's WQ401 Dissolved Oxygen Sensor is a rugged and reliable water oxygen measuring device. The WQ401's sensor is attached to 25' of marine grade cable, with lengths up to 500' available upon request. The sensor's output is 4-20 mA with a three wire configuration. The sensor's electronics are completely encapsulated in marine grade epoxy within a stainless steel housing. The unit uses a removable shield and dissolved oxygen element for easy maintenance.

Record and Control

As with all of Global Water's 4-20 mA output sensors, you can add recording and controlling capabilities to the WQ401 with the GL500 Recorder and PC300 Controller. The GL500 (on page 118) connects to the dissolved oxygen sensor's 4-20 mA output to record data, and the PC300 Controller (on page 132) connects to the sensor's output to control pumps or alarms.

Specifications

Output	4-20 mA
Range	0 to 100% saturation, 0 to 8 ppm, temperature compensated to 25°C
Accuracy	±0.5% full scale
Maximum Pressure	40 psi
Operating Voltage	10 to 36 VDC
Current Draw	15.5 mA plus sensor output
Warm-up Time	10 seconds minimum
Operating Temperature	-40° to +55°C
Membrane	0.001 FEP Teflon (standard)
Combined Error	2% full scale
Size of Probe	Open Water: 1 1/4" dia. x 11" long (3.2cm dia. x 27.9 cm long) Online: 2" dia. x 12" long (5cm dia. x 30.5cm long)
Weight	1 lb (454 g)

Applications



Ideal for stream and lake monitoring, aquaculture studies, baseline analyses, mitigation monitoring, and other environmental applications.

Ordering & Options

Order No.	Description	Price
WQ401	Dissolved Oxygen Sensor for Open Water (includes 25' cable)	
WQ401-O	Online Dissolved Oxygen Sensor (with 1" NPT thread and 25' cable)	
00-740	DO Element Replacement	
WQEXC	Extra Sensor Cable, per foot (up to 500')	

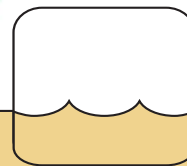
Please call us for calibration standards.

You may also like . . .

- D-Opto Optical Dissolved Oxygen Sensor**
Highly accurate DO sensor. Page 62
- DO600 DO Portable Probe**
Handheld meter with LCD screen for fast and easy DO and temperature measurements. Page 85
- OXI 3150i Handheld Dissolved Oxygen Meters**
Meter with LCD screen that displays oxygen concentrations and temperature. Page 72

WQ600 ORP Sensor

Rugged Oxygen Reduction Potential Sensor



Measuring ORP

ORP stands for oxidation-reduction potential, which is the measurement (in millivolts, or mV) of the oxidizing or reducing tendency of a solution. Oxidation is the loss of electrons from an atom, molecule, or ion, which may or may not be accompanied by the addition of oxygen. When a substance is oxidized, its oxidation state increases. Reduction is the net gain of electrons. When a substance is reduced, its oxidation state is lowered. Oxidation and reduction reactions always accompany each other.

Every oxidation and reduction reaction can be characterized by a half-reaction, which provides all of the chemical substances participating in the reaction (many half-reactions are identified in standard chemistry handbooks or other reference materials). The ORP of the solution depends on the concentrations of the substances participating in the half-reaction. In order to calculate ORP when concentrations vary, the Nernst equation is used (see page 173).

Due to its logarithmic dependence on concentration and its dependence on multiple solution components, ORP is typically not a good method for measuring concentration. The best use of an ORP is in monitoring and controlling oxidation-reduction reactions. When an oxidation-reduction reaction occurs, there is usually a large change in the ORP, which overwhelms the factors that make concentration measurements an issue. This allows you to ensure that an ORP reaction has gone into completion, and thereby control your application appropriately.

Description

Global Water's WQ600 (Redox) ORP Sensor is a rugged and reliable ORP/Redox measuring device. The sensor is molded to 25' of marine grade cable, with lengths up to 500' available upon request. The WQ600's output is 4-20 mA with a three wire configuration. The unit's electronics are completely encapsulated in marine grade epoxy within a stainless steel housing.

Record and Control

As with all of Global Water's 4-20 mA output sensors, you can add recording, control, and display capabilities to the WQ600. The GL500 Global Logger (on page 118) connects to the sensor's 4-20 mA output to record data. The PC300 Process Controller (on page 132) connects to the sensor's output to control pumps or alarms.

Specifications

Output	4-20 mA
Range	-500 to +500 mV
Accuracy	2% full scale
Maximum Pressure	40 psi
Operating Voltage	10 to 36 VDC
Current Draw	0.2 mA plus sensor output
Warm-up Time	3 seconds minimum
Operating Temperature	-40° to +55°C
Cable Length	25' (up to 500' from factory)
Size of Probe	Open Water: 1" dia. x 10½" long (2.5cm dia. x 26.7cm long) Online: 2.5" dia. x 15.5" long (6.3cm dia. x 39.4cm)
Weight	Open Water: 8 oz (227 g) Online: 22 oz (623 g)

Features

- Continuous ORP monitoring
- Fully encapsulated electronics
- 4-20 mA output
- Marine grade cable with strain relief
- Stainless steel housing

Applications



Ideal for stream and lake monitoring, aquaculture studies, baseline analyses, mitigation monitoring, and other environmental applications.

Ordering & Options

Order No.	Description	Price
WQ600	ORP Sensor for Open Water (includes 25' cable)	
WQ600-O	Online ORP Sensor (with 1-1/4" NPT thread and 25' cable)	
WQEXC	Extra Sensor Cable, per foot (up to 500')	

Please call us for calibration standards.

You may also like . . .

- RE300 Handheld ORP Meter**
Handheld meter kit with LCD display for fast and easy ORP measurements. [Page 85](#)
- U-22XD Water Quality Analyzer**
Water quality monitoring system for analyzing several parameters including ORP. [Page 82](#)



Features

- In situ turbidity measurement
- Simple and convenient to use
- 4-20 mA output
- Marine grade polyurethane jacketed cable with strain relief
- Rugged stainless steel and Delrin® housing
- Removable light and debris shield
- Ideal for a variety of applications

Specifications

Output	4-20 mA
Range	0 to 50 NTU and 0 to 1000 NTU
Accuracy	±1% full scale
Method	Nephelometer with correction
Operating Voltage	10 to 36 VDC @ 40 MS
Current Draw	30 mA plus sensor output
Warm-up Time	5 seconds minimum
Operating Temperature	-10° to +50°C
Materials	306 stainless steel, Delrin®, polyurethane jacketed cable
Maximum Pressure	Open Water: 0 to 30 psi Inline: 30 psi
Light Source	Infrared LED, 880nm
Cable Length	25'
Size of Probe	1 1/2" dia. x 8.5" long (3.8 cm dia. x 21.6 cm long)
Weight	1 lb (454 g)

WQ720 Turbidity Sensor

Rugged Submersible Turbidity Sensor

Description

Global Water's WQ720 Turbidity Sensor is a highly accurate submersible instrument for in situ environmental or process monitoring. The sensor is ideal for a variety of applications, including river monitoring, stream measurement, reservoir water quality testing, groundwater testing, water and wastewater treatment, effluent and industrial control, and more.

How it Works

In accordance with USEPA Method 180.1 for turbidity measurement, the WQ720 is a 90 degree scatter nephelometer. The sensor directs a focused beam into the subject water. The light beam reflects off particles in the water, and the resultant light intensity is measured by a photodetector positioned at 90 degrees to the light beam. The detected light intensity is directly proportional to the turbidity of the water. The turbidity sensor

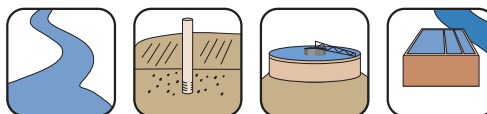
uses a second light detector to correct for light intensity variations, color changes, and minor lens fouling.

For environmental monitoring, simply place the sensor directly in the water and position it where the turbidity is to be monitored. For process monitoring, you can place the sensor into a low-pressure pipe for online monitoring using a standard 1.5" compression coupler.

Record, Control, and Display

For handheld turbidity monitoring, the WQ770-b Turbidity Meter (page 74) combines the WQ720 with a digital display that reads in either NTU or ppm. You can add recording capabilities to the WQ720 with the GL500 Datalogger (page 118), and you can use the sensor to control external devices with the PC300 Controller (page 132).

Applications



Ideal for river monitoring, stream measurement, reservoir water quality testing, groundwater testing, water and wastewater treatment, effluent and industrial control, and more.

Ordering & Options

Order No.	Description	Price
WQ720	Turbidity Sensor for Open Water (includes 25' cable)	
WQEXC	Extra Sensor Cable, per foot (up to 500')	

Please call us for calibration standards.

You may also like . . .

WQ770-b Turbidity Meter

Turbidity sensor and display for simple handheld monitoring.

Page 74

TURB 430 Portable Turbidity Meter

Portable water sample analyzer for accurate turbidity measurements.

Page 75

“The highest good is like water. Water gives life to the ten thousand things and does not strive. It flows in places men reject and so is like the Tao.”

– Tao Te Ching

WQ750 Self-Cleaning Turbidity Sensor

Submersible Turbidity Sensor with Analog Output

Description

The WQ750 Self-Cleaning Turbidity Sensor is an excellent choice for turbidity measurements in applications involving surface water, wastewater effluent, raw source water, industrial discharge, and aquaculture.

The heavy-duty WQ750 is constructed of 316 stainless steel with scratch-resistant quartz optical lenses to provide a long, dependable service life. The unit ships complete with 42 feet of cable and a wiper actuation board.

Reliable Sensing and Transmittal

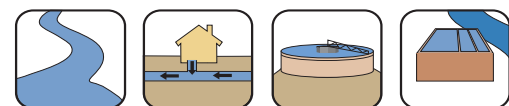
The WQ750 uses a reliable optical sensing system, which produces an analog signal that is enhanced by on-board temperature and ambient light processing. This robust

4-20 mA analog signal is compatible with a host of monitoring and control systems, and it may be transmitted up 650 feet. The WQ750 is compatible with our PC300 process controller (see page 132) and GL500 dataloggers (starting on page 118).

Innovative Self-Cleaning

The WQ750 maintains its accurate and reliable measurements via a mechanical cleaning device that prevents contamination of the measuring windows. The wiper cycle is controlled by an external contact and allows the WQ750 to match the cleaning cycle to the application. The control board is designed to work with our Global Water GL500 dataloggers (starting on page 118).

Applications



Ideal for monitoring water quality in lakes, rivers, streams, plant effluent, wastewater recycling and discharge, and aquaculture applications.

Specifications

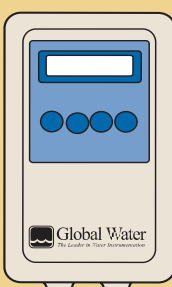
Measuring Principle	90° scattered light with pulsed infrared light
Wavelength	880 nm
Measuring Range	1 to 1000 FNU
Power Requirement	10 to 24 VDC, max 3W
Analog Output	4–20 mA, isolated
Signal Filter	10 sec
Control Signal for Wiper	Pulse duration 5 sec / O V
Temperature Range	32 to 122 °F (0 to +50 °C)
Operating Pressure Maximum	87 psi (200' of water)
Sensor Body	316 stainless steel
Optical Windows	Quartz glass
Cable	42' (13 m), submersible, 6-wire w/shield
Dimensions	1.5" dia. x 5.75" long (38 mm dia. x 146 mm long)
Weight	2 lbs (0.9 kg)

Ordering & Options

Order No.	Description	Price
WQ750	Turbidity Sensor (with 42' cable & wiper control)	

Please call us for calibration standards.

You may also like . . .



PC300 Controller
Use the WQ750 to control external devices.
Page 132

GL500 Datalogger
Add recording capabilities to the WQ750.
Page 118



Features

- Reliable optical measuring process
- Built in wiper to keep sensing surfaces clean
- Directly submersible into basins, channels or open water
- Isolated 4-20 mA output
- Rugged stainless steel sensor body

WQ750 Installation Notes

When installing the WQ750, please note that reflections from stationary objects in the area of the probe (such as a wall or the ground) can affect measurements at low turbidity levels, causing the probe to falsely provide higher turbidity values.

It is particularly important to take account of this when performing control measurements in small vessels. The distance between the probe and the next wall should be large enough to avoid reflections.