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YSI

6-series multiparameter

water quality sondes











long-term monitoring
profiling & spot sampling
sensor guide

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Why YSI?

Top photo: Mike Lizotte (left), YSI's US applications specialist, takes oxygen measurements to spot check sensor performance on a submerged monitoring platform in Biscayne Bay, Florida.

Bottom: Rigor Ma (right), YSI China applications specialist, trains a customer on the operation of a continuous monitoring station in Xiamen, China.





For 60 years YSI, an employee-owned company, has pioneered the development of water quality sensors for use in natural waters.

Our technology saves you time: **We know that meeting the global need for improved environmental monitoring requires fewer technical personnel and a lower cost of ownership. YSI provides turn-key monitoring solutions, easier to use and install equipment, and intuitive interfaces.**

Our reliability improves efficiency: **Successful monitoring efforts depend on accurate and defensible data. We deliver reliable instruments and continuously develop safeguards and system checks to ensure you obtain the highest quality data as quickly as possible.**

Our employees understand your challenges: **Our technical support staff has extensive field experience which helps them provide hands-on support for your monitoring challenges.**

Our customers can reach us: **We have 17 global offices and 300 employees on 5 continents.**

Our experience is proven: **We have the largest installed base of multiparameter sondes with over 20,000 instruments in use worldwide.**

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[800.897.4151 US]
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Choosing YSI

helps you reduce operating costs without sacrificing data accuracy.

Environmental monitoring takes significant investments in time and money. This investment is jeopardized when something goes wrong. Our instruments are reliable and make your data collection as problem-free as possible.

Reduce labor costs through longer maintenance intervals and fewer system failures.

Do it right the first time **with our easy-to-use software and superior technical support.**

Obtain quality data **through features such as zero calibrations on our oxygen sensors and post-processing features in our software.**

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multiparameter sondes
for long-term monitoring

YSI's upgraded 6-Series family includes versatile, multiparameter sondes designed for real-time environmental monitoring and extended deployment.

V2 Sondes

All Version 2 (V2) sondes accept our V2 optical sensors and have a rugged design for long-term monitoring. These sensors feature multiple anti-fouling components and long battery life to provide you with value for your budget.

Seven V2 sondes are offered with sensor payloads ranging from 5-9 sensors and multiple memory and power options to accommodate many different applications. In addition to the sensor options, YSI software calculates up to five additional parameters.



Biofouling protection

Integrated wipers, copper-alloy anti-fouling parts, and a nanopolymer solution significantly deter the growth of biological organisms – thus extending your deployments and reducing your operating costs.





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Applications (suggested uses but not limited to)


Source water monitoring


Short-term studies or spot sampling with complete sensor suite


Dredging studies




Integration into buoys or vertical profiling system


Long-term unattended monitoring




Underway sampling with flow cell for horizontal mapping

6600 V2

6600 V2 sonde features the largest sensor payload capability and longest battery life. Choose between 2 and 4 optical ports. The 6600 V2 and **6600EDS V2** are also available with a pH wiping system.



6600 V2-4 with four ports for any combination of these optical sensors: ROX dissolved oxygen, blue-green algae, turbidity, chlorophyll, or rhodamine

6920 V2

6920 V2 sonde is an economical, 15-parameter logging system; battery powered for long-term, in situ monitoring and profiling. Choose between 1 and 2 optical ports.



600OMS V2

600OMS V2 sonde is our smallest V2 sonde, perfect for applications such as turbidity or oxygen monitoring. Accepts 1 optical sensor as well as conductivity, temperature, and depth.



6820 V2

6820 V2 sonde is a cost-effective sampling system with up to 15-parameter reporting capability, ideal for profiling and spot-checking. Choose between 1 and 2 optical ports.



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multiparameter sondes
for monitoring, sampling & logging

600 Sondes

YSI 600 sondes are designed for specific applications where a fewer number of parameters is required and size and ease-of-use are of primary concern. All five 600 sondes offer a small and economical package for water quality sampling purposes.



Compact 600 sondes have diameters less than 2". The sensors are of the same high quality offered on YSI 6000 sondes.

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Applications (suggested uses but not limited to)



Source water monitoring | Spot sampling | Short-term, unattended studies | Surface and groundwater monitoring | Water level monitoring

600 Sondes

600LS is our simplest sonde, designed for spot sampling level measurements and tide gauge measurements.



600R includes conductivity and temperature sensors and options to add pH and Rapid Pulse™ dissolved oxygen. Ideal for large monitoring programs and educational applications.

The 600QS system includes a 600R, 650 display logger, field cable, and additional sensor options such as ORP and vented level.



600XL and 600XLM sondes are more versatile, ideal for water level monitoring as well as ground water and surface water monitoring. Both sondes include DO, temperature, and conductivity sensors and options to add pH or pH/ORP, depth, and vented level measurements. The XLM offers batteries for unattended, *in situ* monitoring.

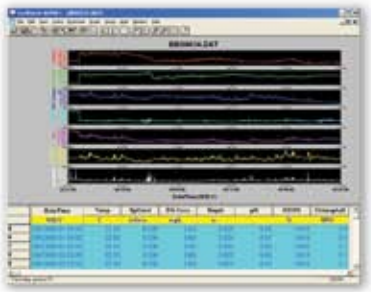
The new **V2** version of both sondes has an optical sensor port.



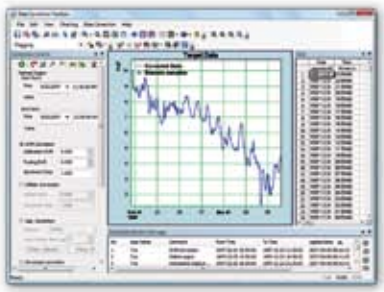


Data Analysis Software

EcoWatch® for Windows®
Standard with all YSI sondes, EcoWatch software makes communication with water quality sensors simple. Includes sensor calibration and sonde configuration tools as well as basic graphing.



AQUARIUS Time-Series™
Optional for YSI sondes, AQUARIUS Time-Series software takes data processing to the next level. Includes advanced graphing tools, error detection and correction, and modeling capabilities.



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drinking water protection



Agriculture and well water

Reservoir monitoring

Water towers and urban areas

Drinking Water Sondes

Gather baseline knowledge and detect events with YSI drinking water sondes. These specialized sondes provide process and quality control throughout a distribution network, helping you deliver safe drinking water.

600DW-B

600DW-B sonde measures temperature, conductivity, pH, ORP, and free chlorine. Portable and powered by batteries or AC.

6920DW

6920DW sonde measures parameters above plus turbidity. Portable and powered by batteries or AC.





sonde interfaces

650MDS



All YSI 6-Series sondes work with the versatile **650MDS** (Multiparameter Display System).

- Easily log real-time data, calibrate, and set up sondes for deployment
- Designed for reliable field use featuring a waterproof IP-67, impact-resistant case
- Upload data to a PC
- Optional barometer and GPS interface

6500 Environmental Process Monitor



6500 Environmental Process Monitor continuously monitors DO, conductivity, temperature, and pH with uninterrupted data. The compact, cost-effective monitor will connect to any 6-Series multiparameter instrument.

By replacing multiple instruments, it reduces labor for installation and operation. Includes 8 scaleable 4-20 mA current loop channels and 4 SPDT relays. Allows calibration in the field or lab.



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YSI 6-series quick select guide

Features/Parameters	V2 Sondes					600 Sondes				Drinking Water		System
	6600	6600EDS	6920	6820	600OMS	600R	600XL	600XLM	600LS	6920DW	600DW-B	600QS
Field-replaceable probes	●	●	●	●	●		●	●		●	●	
RS-232 & SDI-12 standard	●	●	●	●	●	●	●	●	●	●	●	●
Fits 2″ wells					●	●	●	●	●		●	●
Internal memory	●	●	●	●	●	●	●	●	●	●	●	●
Internal power (batteries)	●	●	●		■			●	■	●	●	
Flow cell	■	▲	■	■		■	■	■		■	■	■
Ammonium/ammonia*	□		■	■			▲	▲				
Blue green algae	■	■	■	■	■		□	□				
Chloride*	□		■	■			▲	▲				
Chlorophyll	■	■	■	■	■		□	□				
Conductivity	●	●	●	●	●	●	●	●	■	●	●	●
Depth	■	■	■	■	■		■	■				■
Dissolved oxygen	□	■	□	□		■	■	■				■
Dissolved oxygen, optical	■	■	■	■	■		□	□				
Free chlorine										■	■	
Nitrate*	□		■	■			▲	▲				
Open channel flow**	■	■	■	■	■		■	■	●			
ORP	■	■	■	■			■	■		■	■	■
PAR (Photosynthetically Active Radiation)	▲	▲										
pH	■	■	■	■		■	■	■		■	■	■
Resistivity**	●	●	●	●	●	●	●	●	■	●	●	●
Rhodamine	■	■	■	■	■		□	□				
Salinity	●	●	●	●	●	●	●	●	■	●	●	●
Specific conductance**	●	●	●	●	●	●	●	●	■	●	●	●
Temperature	●	●	●	●	●	●	●	●	●	●	●	●
Total dissolved solids**	●	●	●	●	●	●	●	●	■	●	●	●
Turbidity	■	■	■	■	■		□	□		■		
Vented level	■	■	■	■	■		■	■	●			

* Freshwater only. ** Calculated parameters.

● Standard ■ Customer Selectable ▲ Special Order
■ Available only on 6600 V2-2 □ Available only on 6920 V2-1 or 6820 V2-1
□ Available only on 600XL V2 or 600XLM V2

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high accuracy sensors

Sensors

Quality data is the product of quality sensors and we have built our reputation on providing the highest performance, most reliable water quality sensors available. Our engineers give as much attention to sensor performance in the laboratory as they do to performance under the harshest environmental conditions for extended periods. Additionally, all YSI sensors are field replaceable, helping you with maintenance and unexpected situations.

Optical



Our optical sensors, with integrated extended-deployment wipers, offer excellent performance. The copper-alloy anti-fouling versions offer the longest deployment times in the industry—saving you time and money.

Additionally, user-adjustable data filtering capabilities allow optimized response time or detection limits.

ROX® Optical Dissolved Oxygen The most reliable, accurate, and maintenance-free DO sensor available for worry-free oxygen measurement.

Blue-green Algae Fluorescence sensors monitor blue-green algae biomass in freshwater or marine environments in real-time.

Turbidity Superior linearity, 1-, 2-, or 3-point calibration options and excellent agreement with the industry standard benchtop instrument (Hach 2100AN).

Chlorophyll Accurately monitor total algal biomass without interference from turbidity, ambient light, or dissolved organics.

Rhodamine Conduct dye-tracing studies (flow, transport, mixing) with this sensitive fluorescence sensor.

Electrochemical



Rapid Pulse™ Dissolved Oxygen The most advanced polarographic technology available, Rapid Pulse DO is virtually insensitive to flow rate and exhibits large range (0-50mg/L). EPA approved method.

pH/ORP Excellent performance in cold and low ionic waters. Field-replaceable and includes integrated reference electrode. Fast Response sensor and Extended-deployment versions with wipers available.

Ion-selective electrodes

Measure **ammonia, nitrate,** and **chloride**. Designed for short-term monitoring and spot sampling.



Physical



Conductivity Superior linearity and easy one-point calibration.

Temperature Extremely accurate, field-replaceable temperature sensor.

Integrated



Depth & Vented Level Excellent accuracy through calibration to extremely high precision through temperature compensation over the entire operating range.

PAR Integrate the industry-standard LI-COR® PAR (Photosynthetically Active Radiation) sensor for biological studies. Wiped PAR also available.



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Typical performance specifications

	Range	Resolution	Accuracy
Rapid Pulse dissolved oxygen % air saturation	0 to 500%	0.1%	0 to 200%: ±2% of reading or 2% air saturation, whichever is greater; 200 to 500%: ±6% of reading
Rapid Pulse dissolved oxygen mg/L	0 to 50 mg/L	0.01 mg/L	0 to 20 mg/L: ±2% of reading or 0.2 mg/L, whichever is greater; 20 to 50 mg/L: ±6% of reading
ROX optical dissolved oxygen# % air saturation	0 to 500%	0.1%	0 to 200%: ±1% of reading or 1% air saturation, whichever is greater; 200 to 500%: ±15% of reading; relative to calibration gases
ROX optical dissolved oxygen# mg/L	0 to 50 mg/L	0.01 mg/L	0 to 20 mg/L: ±1% of reading or 0.1 mg/L, whichever is greater; 20 to 50 mg/L: ±15% of reading; relative to calibration gases
Conductivity+	0 to 100 mS/cm	0.001 to 0.1 mS/cm (range-dependent)	±0.5% of reading + 0.001 mS/cm
Temperature	-5 to 50°C	0.01°C	±0.15°C
pH	0 to 14 units	0.01 unit	±0.2 unit
Shallow depth	0 to 9.1 m (0 to 30 ft)	0.001 m (0.001 ft)	±0.018 m (±0.06 ft)
Medium depth	0 to 61 m (0 to 200 ft)	0.001 m (0.001 ft)	±0.12 m (±0.4 ft)
Deep depth	0 to 200 m (0 to 656 ft)	0.001 m (0.001 ft)	±0.3 m (±1 ft)
Vented level	0 to 9.1 m (0 to 30 ft)	0.001 m (0.001 ft)	±0.003 m (±0.01 ft)
Open-channel flow	Calculated measurement, requires vented level		
Free chlorine	0 to 3 mg/L	0.01 mg/L	±15% of reading or 0.05 mg/L, whichever is greater
ORP	-999 to +999 mV	0.1 mV	±20 mV in Redox standard solutions
Salinity	0 to 70 ppt	0.01 ppt	±1% of reading or 0.1 ppt, whichever is greater
Nitrate/nitrogen*	0 to 200 mg/L-N	0.001 to 1 mg/L-N (range dependent)	±10% of reading or 2 mg/L, whichever is greater
Ammonium/ammonia/ nitrogen*	0 to 200 mg/L-N	0.001 to 1 mg/L-N (range dependent)	±10% of reading or 2 mg/L, whichever is greater
Chloride*	0 to 1000 mg/L	0.001 to 1 mg/L (range dependent)	±15% of reading or 5 mg/L, whichever is greater
Turbidity#	0 to 1,000 NTU	0.1 NTU	±2% of reading or 0.3 NTU, whichever is greater in YSI AMCO-AEPA Polymer Standards
Rhodamine WT#	0-200 µg/L	0.1 µg/L	±5% of reading or ±1 µg/L, whichever is greater
Chlorophyll#++	**Range** 0 to 400 µg/L chl *a* 0 to 100 RFU	**Resolution** 0.1 µg/L chl *a* 0.1% FS; 0.1 RFU	**Linearity** R^2 > 0.9999 for serial dilution of Rhodamine WT solution from 0 to 500 µg/L
Blue-green algae# phycocyanin	**Range** 0-280,000 cells/mL	**Detection limit** 220 cells/mL§	**Linearity** R^2 = 0.9999 for serial dilution of Rhodamine WT from 0 to 400 µg/L
Blue-green algae# phycoerythrin	0-200,000 cells/mL	450 cells/mL§§	R^2 = 0.9999 for serial dilution of Rhodamine WT from 0 to 8 µg/L
PAR	**Range** 400-700 nm waveband	**Calibration** ±5%	**Stability** <±2% change over 1 year
	Linearity Max. deviation of 1%	**Sensitivity** Typically 3µA per 1000 µmol s-1 m-2 in water	

Depth rating for optical probes is 61 m (200 ft); depth rating for anti-fouling optical probes with copper-alloy probe housing is 200 m (656 ft). * Freshwater only. Maximum depth rating of 15.2 m (50 ft). + Report outputs of specific conductance (conductivity correct to 25° C), resistivity, and total dissolved solids are also provided. These values are automatically calculated from conductivity according to algorithms found in *Standard Methods for the Examination of Water and Wastewater* (ed 1989). ** To maintain accuracy specification, flow must be at least 500 mL/min and pH should not change by more than ±0.3 units if mean pH is between 8.5 and 9.3. ++ Specification determined using monocultures of *Isochrysis sp.* and fluorometric extraction of chlorophyll *a*. Actual detection limits will vary depending on natural algae assemblage. § Estimated from cultures of *Microcystis aeruginosa*. §§ Estimated from cultures of *Synechococcus sp.*

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YSI Environmental

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Third-Party Verification You Can Trust

YSI is the only company in its field to apply for and receive verification from the US EPA's Environmental Technology Verification Program. Independent tests on the YSI 6600EDS sonde and six sensors demonstrated the accuracy of YSI sensor technology when compared to established standards in saltwater and freshwater. Find information on performance characteristics of YSI water quality sensors at www.epa.gov/etv.*

The Alliance for Coastal Technologies (ACT) has tested the YSI 6600EDS V2 and 6600 V2 sondes and 3 sensors under real-world conditions. Find evaluation reports at www.act-info.us.

YSI multiparameter sondes have achieved the UK Environment Agency MCERTS certification for continuous water monitoring. Find more information at www.mcerts.net.

*Use of the ETV name or logo does not imply approval or certification of this product nor does it make any explicit or implied warranties or guarantees as to product performance.

Environmental Calculation Report

YSI Inc. saved the following resources by using Utopia U2:XG paper, made with 30% recycled post-consumer waste:

trees	energy	greenhouse gas	water	solid waste
2	1.3 mil BTUs	617.45 lbs CO_2	659 gal	109 lbs

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