



6-series multiparameter

water quality sondes



long-term monitoring
profiling & spot sampling
sensor guide



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 12 global offices and 250 employees on 3 continents.

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



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.

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 anti-fouling wipers as well as an improved wiping algorithm to prevent mis-parking.

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.



Virtually maintenance-free Integrated wiped fouling protection for DO, pH, ORP, turbidity, blue-green algae, and chlorophyll or rhodamine sensors.

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.



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, ease-of-use, and price 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.

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.

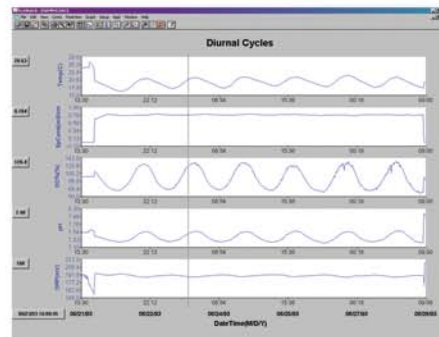
The new **V2** version of both sondes has an optical sensor port.



EcoWatch®

EcoWatch® for Windows®

Standard with all YSI sondes, EcoWatch software makes communication with water quality sensors and data analysis simple. EcoWatch works with any YSI 6-Series sonde or 650 handheld display logger.



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.



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

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 are designed and manufactured by YSI. Their excellent performance, coupled with integrated extended deployment wipers, 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 low ionic water. Field-replaceable and includes integrated reference electrode. Extended-deployment versions with wipers available (*shown at bottom left*).

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.

Typical performance specifications

| | Range | Resolution | Accuracy |
|---|---|---|---|
| Rapid Pulse dissolved oxygen % air saturation | 0 to 500% | 0.1% | 0 to 200%: $\pm 2\%$ of reading or 2% air saturation, whichever is greater; 200 to 500%: $\pm 6\%$ of reading |
| Rapid Pulse dissolved oxygen mg/L | 0 to 50 mg/L | 0.01 mg/L | 0 to 20 mg/L: $\pm 2\%$ of reading or 0.2 mg/L, whichever is greater; 20 to 50 mg/L: $\pm 6\%$ of reading |
| ROX optical dissolved oxygen[#] % air saturation | 0 to 500% | 0.1% | 0 to 200%: $\pm 1\%$ of reading or 1% air saturation, whichever is greater; 200 to 500%: $\pm 15\%$ 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: $\pm 1\%$ of reading or 0.1 mg/L, whichever is greater; 20 to 50 mg/L: $\pm 15\%$ of reading; relative to calibration gases |
| Conductivity⁺ | 0 to 100 mS/cm | 0.001 to 0.1 mS/cm (range-dependent) | $\pm 0.5\%$ of reading + 0.001 mS/cm |
| Temperature | -5 to 50°C | 0.01°C | $\pm 0.15^\circ\text{C}$ |
| 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 | $\pm 15\%$ 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 | $\pm 1\%$ 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) | $\pm 10\%$ 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) | $\pm 10\%$ of reading or 2 mg/L, whichever is greater |
| Chloride[*] | 0 to 1000 mg/L | 0.001 to 1 mg/L (range dependent) | $\pm 15\%$ of reading or 5 mg/L, whichever is greater |
| Turbidity[#] | 0 to 1,000 NTU | 0.1 NTU | $\pm 2\%$ of reading or 0.3 NTU, whichever is greater in YSI AMCO-AEPA Polymer Standards |
| Rhodamine WT[#] | 0-200 $\mu\text{g/L}$ | 0.1 $\mu\text{g/L}$ | $\pm 5\%$ of reading or ± 1 $\mu\text{g/L}$, whichever is greater |
| Chlorophyll^{# ++} | Range 0 to 400 $\mu\text{g/L chl } a$ 0 to 100 RFU | Resolution 0.1 $\mu\text{g/L chl } a$ 0.1% FS; 0.1 RFU | Linearity $R^2 > 0.9999$ for serial dilution of Rhodamine WT solution from 0 to 500 $\mu\text{g/L}$ |
| 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 $\mu\text{g/L}$ |
| 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 $\mu\text{g/L}$ |
| PAR | Range 400-700 nm waveband Linearity Max. deviation of 1% | Calibration $\pm 5\%$ Sensitivity Typically 3 μA per 1000 $\mu\text{mol s}^{-1} \text{m}^{-2}$ in water | Stability < $\pm 2\%$ change over 1 year |

[#] Maximum depth rating for optical probes is 61 m (200 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.

Y S I Environmental

Pure Data for a Healthy Planet.®



To order or for more information,
contact YSI Environmental.

800 897 4151
www.YSI.com

YSI Environmental
1700/1725 Brannum Lane
Yellow Springs, Ohio 45387
+1 937 767 7241
+1 937 767 9353 fax
environmental@ysi.com

SonTek/YSI
+1 858 546 8327
+1 858 546 8150 fax
inquiry@sontek.com

YSI Integrated Systems & Services
+1 508 748 0366
+1 508 748 2543 fax
systems@ysi.com

YSI Hydrodata
European Support Centre
+44 1462 673581
+44 1462 673582 fax
europe@ysi.com

YSI (Hong Kong) Limited
+852 2891 8154
+852 2834 0034 fax
hongkong@ysi.com

YSI Middle East
+973 17536222
+973 17536333 fax
halsalem@ysi.com

YSI/Nanotech (Japan)
+81 44 222 0009
+81 44 221 1102 fax
nanotech@ysi.com

YSI China
+86 10 5203 9675
+86 10 5203 9679 fax
beijing@ysi-china.com



Third-Party Sensor 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 following sensors demonstrated the accuracy of YSI sensor technology when compared to established standards in saltwater and freshwater:

- 6025 Chlorophyll
- 6560 Conductivity
- 6562 Dissolved Oxygen
- 6561 pH
- 6560 Temperature
- 6136 Turbidity

Sensors listed above were submitted to ETV program on YSI 6600EDS. Find information on performance characteristics of YSI water quality sensors at www.epa.gov/etv or call YSI at +1 937 767 7241 for ETV Verification Report. 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.

ISO 9001
ISO 14001
(Yellow Springs facility)

Pure Data for a Healthy Planet and Who's Minding the Planet? are registered trademarks and ROX and Rapid Pulse are trademarks of YSI Incorporated. Windows is a registered trademark of Microsoft Corporation. LI-COR is a registered trademark of LI-COR Biosciences.

©2007 YSI Incorporated
E23-06 0207 Printed in the USA

| ENVIRONMENTAL BENEFITS STATEMENT | | | | |
|---|-------------|----------------|-------------|------------------|
| NEW LEAF PAPER™ | | | | |
| YSI, Inc. saved the following resources by using New Leaf Reincarnation, made with 100% recycled fiber, 50% post-consumer waste, and processed chlorine free. | | | | |
| trees | water | energy | solid waste | greenhouse gases |
| 5 fully grown | 972 gallons | 2 million BTUs | 213 pounds | 359 pounds |
| <small>Calculations based on research by Environmental Defense and other members of the Paper Task Force.</small> | | | | |
| <small>©2006 New Leaf Paper www.newleafpaper.com</small> | | | | |



YSI incorporated
Who's Minding the Planet?®