



# Water Monitoring Solutions



E58-07

a xylem brand

# Water is our most precious resource.

And all our systems help you measure and protect it.

YSI and its divisions take great pride in designing, building, and servicing the high-precision instruments that help you collect accurate and reliable water quality and velocity data.

Our instruments and accessories are field-proven for applications such as:

- Aquaculture
- Bridges & Dams
- Coasts & Estuaries
- Groundwater
- Lakes & Ponds
- Oceans
- Ports & Harbors
- Reservoirs
- Rivers & Streams
- Wastewater
- Wetlands



# Why YSI?

For 60 years, YSI has pioneered the development of high-quality instrumentation for use in natural waters.

## Our technology saves you time:

Meeting the global need for improved environmental monitoring requires fewer technical personnel and a lower cost of ownership. YSI provides accurate sampling and turn-key monitoring solutions, equipment that is easy to use and install, 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 staff has extensive field experience which helps them provide viable solutions and hands-on support for your monitoring challenges.

## Our customers can reach us:

We have 17 global offices on 5 continents.

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**Quick Links**

[ysi.com/proplus](http://ysi.com/proplus)

[ysi.com/proODO](http://ysi.com/proODO)

[ysi.com/proOBOD](http://ysi.com/proOBOD)

[ysi.com/pro20](http://ysi.com/pro20)

[ysi.com/pro2030](http://ysi.com/pro2030)

[ysi.com/pro30](http://ysi.com/pro30)

# Sampling & Testing



**Applications**

- Groundwater
- Wastewater
- Aquaculture
- Surface water

**Parameters**

- Temperature
- Dissolved oxygen
- pH
- ORP
- Conductivity
- Specific conductance
- Salinity
- Total dissolved solids
- Resistivity
- Barometric pressure
- Ammonium/ammonia
- Nitrate
- Chloride
- BOD

**Professional Plus**

- Measures any combination of dissolved oxygen, pH, conductivity, ORP, ammonium, nitrate, chloride, salinity, total dissolved solids, barometric pressure, and resistivity
- Interval or single-event logging with 5,000 data set memory and 100 site list and file folder capabilities; GLP conforming data
- Features on-screen help, backlit display and keypad, user-replaceable cables and sensors, and auto-buffer recognition
- Lab-grade pH and ORP and lab BOD also available

**ProODO®**

- Non-consumptive optical DO luminescent method eliminates the need for stirring
- Expanded DO range of 0-500%
- Field-rugged user-replaceable cables in lengths up to 100 meters
- Digital technology stores cal data in the sensor so you can place it on any ProODO instrument

**ProOBOD™ Probe**

- Self-stirring optical BOD probe
- Two-year warranty
- No warm-up required
- Extremely quiet operation
- Guarded cap protects sensor

**Pro20**

- Choose between polarographic or galvanic DO sensors
- Interchangeable probes and cables reduce down-time
- Measures dissolved oxygen and temperature in lab and field
- Industry's quickest DO response saves you time
- One Touch Cal feature calibrates within seconds

**Pro2030**

- Choose between polarographic or galvanic DO sensors
- Interchangeable probes and cables reduce down-time
- Measures dissolved oxygen, conductivity, salinity, TDS, and temperature
- Automatically compensates DO for changes in salinity

**Pro30**

- Conductivity, salinity, specific conductance, TDS
- Proven, rugged four-nickel electrode
- 3-year instrument and 2-year cable/probe warranty



**Data Manager Desktop Software**

- Free with ProPlus and ProODO
- Easy-to-use software to manage all data, set up instruments, or conduct real-time studies
- View graphical and tabular data
- USB connection powers the instrument

**800 897 4151 US**  
**+1 937 767 7241**



**Quick Links**  
[ysi.com/photometers](http://ysi.com/photometers) [ysi.com/laboratory](http://ysi.com/laboratory)  
[ysiecosense.com](http://ysiecosense.com)

# Sampling & Testing

Colorimetry      EcoSense

Laboratory

**Applications**

Groundwater  
 Wastewater  
 Aquaculture  
 Surface water  
 Industrial

**Parameters**

Temperature  
 Dissolved oxygen  
 pH  
 ORP  
 Conductivity  
 Level  
 Specific conductance  
 Salinity  
 Total dissolved solids  
 Resistivity  
 Barometric pressure  
 Ammonia  
 Calcium  
 Chlorine  
 BOD  
 COD  
 Hardness  
 Iron  
 Nitrate  
 Alkalinity and more

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**Single-Parameter  
 900 Chlorine**

- Measure chlorine (free and total)

**910 COD**

- Measure COD (various ranges)



**Multiparameter  
 pHotoFlex STD**

- Measures 85 tests

**pHotoFlex pH**

- Measures 138 tests plus pH with pH electrode



**Photometers  
 9300 & 9500**

- 100+ tests, including hardness, ammonia, calcium, and nitrate
- IP-67 waterproof
- Non-hazardous reagents with long shelf life



**Handhelds  
 pH100A**

- pH and mV
- IP-67 waterproof
- 50-data set memory

**DO200A**

- DO and BOD
- IP-67 waterproof
- 50-data set memory

**EC300A**

- Conductivity, salinity and TDS
- IP-67 waterproof
- 50-data set memory



**Pen-Style  
 pH10A**

- pH
- Auto-buffer recognition
- 1-, 2-, or 3-point calibration

**ORP15A**

- ORP (absolute or relative mV)
- 50-data set memory

**EC30A**

- Conductivity, salinity
- 1-year warranty
- IP-67 waterproof



**Dissolved Oxygen & BOD  
 5000 & 5100**

- Lab standard for DO and BOD
- Auto-Cal function

**Conductivity  
 3100 and 3200**

- High-precision electrodes with temperature sensors
- Simple to advanced

**pH  
 pH1200**

- Lab grade pH, mV
- Auto-buffer recognition



**MultiLab IDS**

- 1-, 2-, or 3-channel meters
- Lab optical BOD, pH, ORP and conductivity





**Quick Links**  
[ysi.com/sondes](http://ysi.com/sondes)  
[ysi.com/castaway](http://ysi.com/castaway)

# Sampling, Logging & Profiling



## 600LS sonde

- Designed for spot sampling level measurements and tide gauge measurements

## 600R

- Conductivity and temperature sensors and options to add pH and Rapid Pulse™ dissolved oxygen
- Ideal for large monitoring programs and educational applications



## 600XL and 600XLM sondes

- Ideal for water level monitoring, ground water and surface water monitoring
- Includes DO, temperature, and conductivity sensors and options to add pH or pH/ORP, depth, and vented level
- XLM has batteries for unattended, *in situ* monitoring

## 650MDS

- Multiparameter Display System
- Connects to any 6-Series multiparameter instrument
  - Easily log real-time data, calibrate, and set up sondes for deployment
  - Upload data to a PC
  - Optional barometer and GPS interface



## 600XL/600XLM V2 sondes

- Ideal for water level monitoring, ground water and surface water monitoring
- Includes DO, temperature, and conductivity sensors and options to add pH or pH/ORP, depth, and vented level
- Includes one optical sensor port for dissolved oxygen, blue-green algae, chlorophyll, rhodamine, or turbidity
- XLM has batteries for unattended, *in situ* monitoring



## CastAway®-CTD

- 5 Hz response and sampling rate
- Accurate to 0.1 PSU, 0.05°C
- Internal GPS
- Bluetooth wireless data download
- No user calibration required
- No tools, computers or cables required

### Applications

Short-term studies  
 Lake & stream sampling  
 Groundwater wells  
 Tide gauge measurements  
 Water level  
 Sound velocity profiles  
 Saltwater intrusion  
 Hydrographic surveying  
 Coastal research  
 Fisheries

### Parameters

Conductivity  
 Temperature  
 Depth  
 Vented level  
 pH  
 ORP  
 Dissolved oxygen  
 Turbidity  
 Nitrate  
 Ammonium  
 Chloride  
 Salinity  
 Sound speed

**800 897 4151 US**  
**+1 937 767 7241**



**Quick Links**  
[ysi.com/sondes](http://ysi.com/sondes)  
[EXOWater.com](http://EXOWater.com)

# Long-term Monitoring



## Applications

- Continuous monitoring
- Source water
- Lake profiling
- Dredging
- Underway sampling
- PAR studies
- Algal bloom monitoring
- Coastal studies
- Saltwater intrusion

## Parameters

- Conductivity
- Temperature
- Dissolved oxygen
- Chlorophyll
- Blue-green algae
- Turbidity
- Rhodamine
- Depth
- Vented level
- PAR
- pH
- ORP
- fDOM

### 6600 V2 sonde

- Large sensor payload capability and long battery life
- Choose between 2 and 4 optical ports for dissolved oxygen, blue-green algae, chlorophyll, rhodamine, and turbidity
- Also available with a pH wiping system

### 6920 V2 sonde

- Economical, 15-parameter logging system
- Battery powered for long-term, *in situ* monitoring and profiling
- Choose between 1 and 2 optical ports

### 6000MSV2 sonde

- Perfect for applications such as turbidity or oxygen monitoring
- Accepts 1 optical sensor as well as conductivity, temperature, and depth

### 6820 V2 sonde

- Cost-effective sampling system with up to 15-parameter reporting capability
- Ideal for profiling and spot-checking
- Choose between 1 and 2 optical ports

### EXO1 sonde

- Surface and groundwater monitoring down to 250 m (828 ft)
- Bluetooth wireless communication
- Quick and easy calibration of multiple sensors
- Welded titanium sensors including conductivity, dissolved oxygen, fDOM, pH, ORP, turbidity, and total algae

### EXO2 sonde

- CTD plus 3-5 additional sensors
- Coastal and marine monitoring down to 250 m (828 ft)
- Seamless integration and "daisy chaining" into monitoring systems
- Flexible sensor payload/configurations
- Welded titanium sensors
- Antifouling wiper helps to extend deployments to more than 90 days

**800 897 4151 US**  
**+1 937 767 7241**







**Quick Links**  
[sontek.com/oceanography.html](http://sontek.com/oceanography.html)  
[sontek.com/laboratory.html](http://sontek.com/laboratory.html)

# Velocity, Currents & Flow

## Applications

- Bottom boundary
- Currents
- Discharge
- Tide level
- Flow/low flow
- Sediment transport
- Flumes
- Near-shore monitoring
- Waves



### ADPs (Acoustic Doppler Profilers)

- Rugged, multi-purpose current profilers
- Configure for real-time monitoring and autonomous deployment
- Profiling to 200 meters
- Options for bottom tracking, directional waves, and integrated external sensors



### HydroSurveyor

- Collect bathymetric, water column velocity profile, and acoustic bottom tracking as part of hydrographic survey
- Includes ADP platform and powerful data collection software
- Water sound speed corrections interpolated in space and time when bundled with CastAway-CTD



### Argonaut®-XR

- Affordable and easy-to-use current profiler
- Automatically adjusts sampling volume with changing tide level or river stage
- Bottom-mounted for near-shore deployments
- Wave height and spectra



### Argonaut®-MD

- Oceanographic single-point current meter for deployments up to one year
- Clamps directly to mooring line or use cage
- Standard compass/tilt and temperature sensors, and optional pressure and conductivity sensors



### MicroADV

- Three-axis velocity measurement for hydraulics research in labs
- Sampling rates up to 50 Hz; sampling volume 0.09 cc
- Excellent for low-flow and turbulence studies



### ADVOcean

- Rugged ADV for hostile environments such as surf zone
- 3-dimensional velocity measurement
- Hydra version for autonomous deployment includes compass/tilt sensor, pressure sensor, and optional external sensors

+1 858 546 8327



# Velocity, Currents & Flow

## Applications

- Discharge calculation
- Stream indexing
- Real-time flow
- Irrigation
- Wastewater effluent



### Argonaut®-ADV

- Single-point, shallow-water flow monitoring
- Rugged ADV head and internal battery pack for autonomous deployment
- Ideal for streams, marshes, lakes, and water treatment facilities



### Argonaut®-SL

- 2D, side-looking velocity, level, and flow meter
- Calculates flow/discharge via theoretical or index-velocity ratings
- Installs on side of river or open channel for easy access and quick maintenance
- Measures remotely, avoiding flow interference from piers or pilings



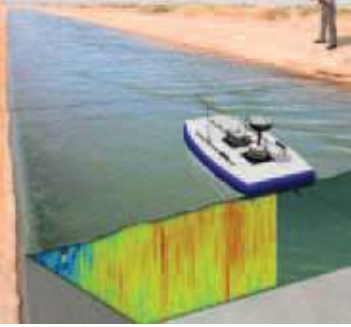
### SonTek-IQ

- Specifically designed for open channels
- Velocity profiles in three dimensions with cells as small as 2 cm (0.8 in)
- Robust measurements in complex flow conditions
- Velocity, level, flow and total volume ranging from 0.3-16 ft (0.09-5.0 m)
- Outputs: SDI-12, Modbus, 4-20 mA, ASCII and RS-232



### SonTek-IQ Pipe

- Designed for closed conduits
- Velocity profiles in three dimensions with cells as small as 2 cm (0.8 in)
- Robust measurements in complex flow conditions
- Velocity, level, flow and total volume in pipes with diameter between 1.5-16 ft (0.45-5.0 m)
- Outputs: SDI-12, Modbus, 4-20 mA, ASCII and RS-232



# Velocity, Currents & Flow



S5

M9

## RiverSurveyor

- Accurately measures discharge from moving boats
- Computes complete 3-D velocity profile and bathymetric channel cross-section in minutes
- Optional tethered platform for measurements from bridges
- Features multi-frequency velocity beams for robust bottom tracking and vertical beam for precise bathymetric surveying
- Internal DGPS with RTK option
- Embedded echosounder



## FlowTracker Handheld ADV

- Wading discharge or velocity measurements in streams, weirs, flumes, and open channels
- Easily attaches to top-setting wading rod
- SmartQC for instant feedback on data quality
- Supports multiple river discharge methods and current velocity measurements
- Output data directly into FlowPack
- Multi-language



## FlowPack Software

- Store flow, velocity, and stage measurements in one software
- Generate velocity-index ratings and comprehensive reports



## Flow Display

- Options for 4-20 mA outputs
- Connect to the SonTek-IQ and read flow data in the field without connecting to a laptop

## Applications

- Discharge calculation
- Stream indexing
- Real-time flow
- Irrigation





# Hydrological Monitoring



## Storm 3 Browser-based Datalogger

- Simple and intuitive browser-based GUI
- GUI works on PCs, laptops, tablets and smart phones
- Direct (USB) or Wi-Fi connection
- Linux-based OS



## H-522+ DCP Data Collection Platform with Integrated Satellite Transmitter

- Satellites supported: GOES/METEOSAT/INSAT
- Menu-driven setup
- Integral GPS with random and self-timed transmissions
- Upgradable to future protocols such as NOAA/NESDIS V2.0



## System 5000 Datalogger

- Easy-to-read color display with LED backlight and touch screen
- Built-in graphical user interface
- LINUX-based operating system
- 256 MB internal data logging memory (expandable to 4 GB)



## H-2221 High Data Rate Satellite Transmitter

- Highest accuracy radio for reliable satellite transmissions in extreme environments
- Supports 100, 300 and 1200 BPS (GOES)
- Menu-driven setup
- Low standby power
- Integral GPS with random and set-timed transmissions
- Upgradable to protocols such as NESDIS V2.0



## H-3553 Self-contained Bubbler

- Bubbler/pressure sensor in one unit
- Built-in display version
- Depths to 115 ft (35 m)
- No needle valve or diaphragm problems
- Automatic or manual controlled purge up to 90 psi
- Purge sustain feature
- Dependable mass flow rate control
- Nitrogen tank not required

## Applications

Water level monitoring  
Dams and bridges  
Reservoir and tanks  
Remote data delivery  
Real-time alerts



## H-3600 Series Radar Sensor

- Non-contact level measurement replaces stilling wells and other infrastructure
- Not susceptible to damage from debris
- Less maintenance than tide and stage sensors
- Measurement range up to 230 ft (70 m)



## H-3123 Submersible Pressure Sensor

- 0.02% FSO accuracy
- SDI-12 output
- Measurement transmitted digitally over long cable lengths without error
- Vented pressure sensor



## H-340-SDI Tipping Bucket Rain Gauge

- Magnetic reed switch sensor
- 0.01" or 0.2mm tip versions available
- SDI-12 output



## H-3342 Absolute Shaft Encoder

- Absolute, optical encoder preserves correct position even if power is lost
- Accuracy 0.00024 ft
- Built-in display with "Push to Read" button
- SDI-12, 4-20 mA outputs



# Integrated Systems



## Environmental Monitoring Modules

- **Coastal Buoys** for high energy environments and large sensor payloads
- Proven design deployed around the world
- Standard wave, current, and water quality solution without customization
- In-house design and manufacturing for solutions with alternative telemetry, prototype instruments, larger hulls, and custom software solutions
- Engineered with oceanographic-grade materials

### Applications

Baseline studies  
Dredging  
Emergency response  
Fisheries  
Non-point source/TMDL  
Point source/discharge  
Stormwater & CSO  
Source water  
Lakes  
Estuaries  
Bays  
Continental shelf

### Parameters

Water quality  
MET  
Currents  
Nutrients  
PAR  
Hydrocarbons



- **Inland Buoys** for lakes and rivers
- Can be deployed by several people in small watercraft
- Designed for years of reliable operation
- Tamper- and vandal-resistant for public areas
- Batteries situated to lower center of gravity

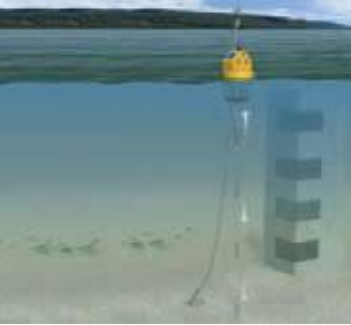
### PISCES

- Mobile, towable monitoring platform for river and high-current applications
- Meteorological sensor and current meter options
- Easy to deploy
- Options for multi-depth sampling and flow-through cell configuration



- **Small Buoy** for short-term, project-based deployments
- Integral deployment tube protects multiparameter water quality sonde
- Submersible rechargeable battery pack acts as buoy ballast weight
- One base station collects data from network of buoys
- Easily deployable





**Quick Links**  
[ysisystems.com](http://ysisystems.com)  
[ysi.com/ecomapper](http://ysi.com/ecomapper)

# Integrated Systems



## Applications

- Remote data delivery
- Real-time alerts
- Reservoir monitoring
- Aquaculture
- Algal bloom monitoring
- Discharge
- Bottom mapping
- Drinking water intake

## Parameters

- Water quality
- MET
- Currents
- Nutrients
- Bathymetry
- Side-scan sonar

## Vertical Profiling Systems

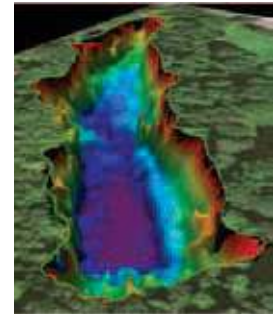
- Monitor water quality at various depths
- Continuously monitor stratification and mixing without trips to the field
- Detect short-term events—storms, sediment transport, algal blooms—in water column
- Automated, unattended profiling helps track changes with complete data set
- Reduce equipment maintenance by using one sonde to profile entire water column
- Buoy and pontoon platform options

## EcoNet™

- Delivers remote data to web or workstation
- Automated data reports, alarms, and alerts
- No programming necessary; changes made through graphic interface
- Add up to 15 sensors and more than 50 parameters to a single station
- Simplifies network with hosting, delivery, reporting, and maintenance services from single supplier

## EcoMapper™

- Autonomous under-water vehicle with remote control
- Deployable by one person
- High-resolution mapping of water quality, current, and bathymetry over large areas
- Easy-to-use mission planning software
- Triple frequency side-scan sonar
- 6/10 beam Doppler velocity log
- Iridium tracking capabilities
- 100 meter max rating



**877 392 9950 US**  
**+1 727 565 2201**





**Quick Links**  
[ysisystems.com](http://ysisystems.com)  
[ysiservices.com](http://ysiservices.com)

# Services



**We can partner with you to provide:**

- Project definition
- Site evaluation
- Systems design
- Integration and testing
- Construction and installation
- On-site training
- Data collection and delivery
- Extended support and service contracts
- Project management
- Rental



**SeaKeeper 1000™**

- Automated underway sampling system on ship
- No crew interaction needed
- Actively contribute to environmental and climate research
- Satellite communication from anywhere in the world
- YSI installs and maintains the system

**877 392 9950 US**  
**+1 727 565 2201**

# What can Xylem do for you?

We're 12,500 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to [www.xylem.com](http://www.xylem.com)



SonTek/YSI  
9940 Summers Ridge Rd  
San Diego, CA 92121  
Tel +1 858 546 8327  
[inquiry@sontek.com](mailto:inquiry@sontek.com)  
[www.sontek.com](http://www.sontek.com)



Design Analysis Associates  
75 West 100 South  
Logan, UT 84321  
Tel +1 435 753 2212  
[daa@daa-utah.com](mailto:daa@daa-utah.com)  
[www.waterlog.com](http://www.waterlog.com)



YSI Incorporated  
1700/1725 Brannum Lane  
Yellow Springs, Ohio 45387  
Tel +1 937 767 7241  
[environmental@ysi.com](mailto:environmental@ysi.com)  
[www.ysi.com](http://www.ysi.com)

YSI Integrated Systems & Services  
9843 18th Street North, Suite 1200  
St. Petersburg, FL 33716  
Tel +1.727.565.2201  
[systems@ysi.com](mailto:systems@ysi.com)  
[www.ysisystems.com](http://www.ysisystems.com)

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## ECO CALCULATIONS REPORT

YSI Inc. saved the following resources by using Neenah Environment paper made with a minimum of 30% post-consumer fiber and 100% renewable electricity.

trees	energy	greenhouse gas	waste water	solid waste
1	0.5 mil BTUs	324.09 lbs CO <sub>2</sub>	258 gal	43 lbs