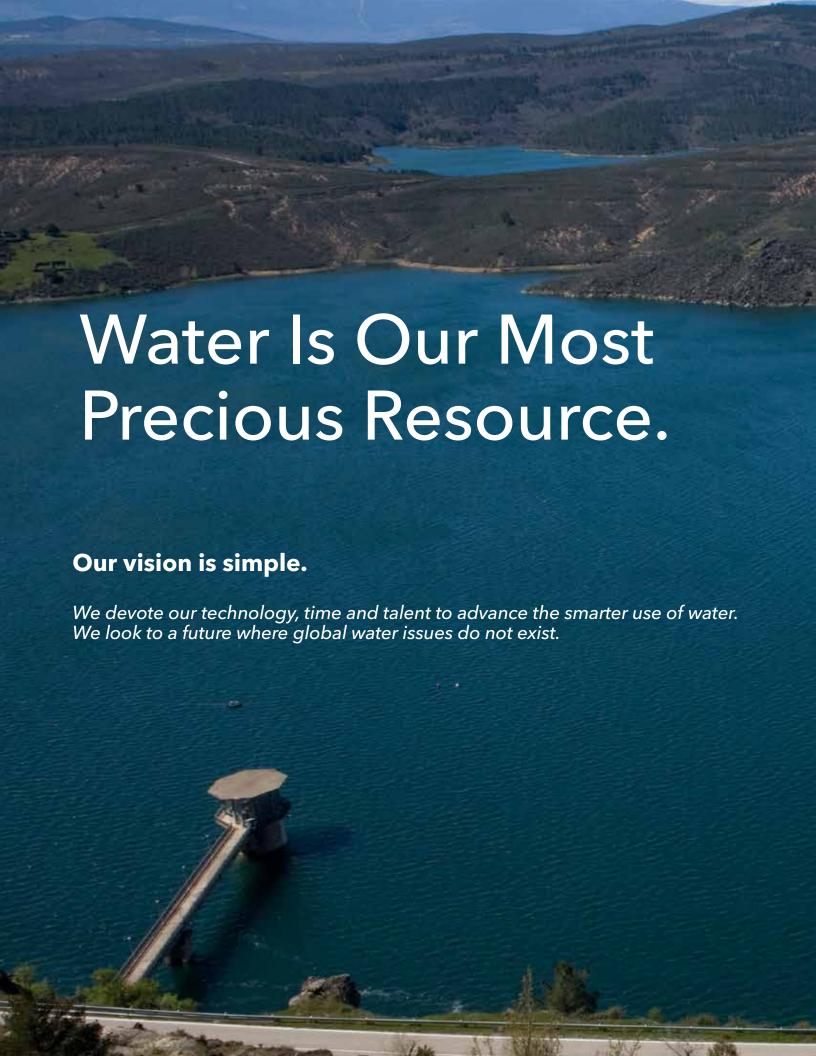


Surface Water

INNOVATIVE WATER SAMPLING MONITORING SOLUTIONS





At Xylem, We Are Committed To Helping You Solve Your Toughest Water Resource Challenges.

Our technology saves you time

Our sampling, measurement and monitoring solutions provide accurate, high quality data and a low total cost of ownership that reduces downtime and maintenance.

Our reliability improves efficiency

We deliver reliable instruments and continuously develop safeguards and system checks to ensure that 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.

Together we can protect our most precious resource. Together, we can solve water.

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Our Analytical Brands

Xylem Analytics Websites

- Australasia www.xylem-analytics.com.au
- Asia Pacific <u>www.xylem-analytics.asia</u>
- South Asia www.xylem-analytics.in
- Vietnam <u>www.xylem-analytics.vn</u>
- Japan www.ysijapan.com

Brand Websites / Blogs

- sontek.com
- wtw.com
- xylemanalytics.com
- ysi.com
- ysisystems.com
- ysi.com/blog
- exowater.com
- hypack.com

Xylem is built around the brands you know and trust—some of which have been providing reliable monitoring solutions to you for the last 65 years. We take great pride in designing, building, and servicing the high precision instruments and monitoring systems that help you collect accurate and reliable water resource data and information.



YSI is a world leader in water quality and water level instruments, real-time data logger telemetry systems, and custom simple-to-complex multiplatform monitoring solutions.



WTW is a leading designer and manufacturer of quality water testing instrumentation for lab, field and online applications worldwide.



SonTek is one of the world's leading manufacturers of acoustic Doppler systems for flow and velocity measurements.



HYPACK is a world leader in software development for the hydrographic and dredging industry since 1984.



Surface water can be affected by land use, agricultural practices, pollution and climate change.

Monitoring and treatment of surface water, requires significant investments in time and money. These investments and public health may be jeopardized if surface water is contaminated.

Trust Xylem's sensors and systems to provide a continuous and comprehensive record of water quality and quantity. Our instruments and software provide the reliable data you need to act quickly, work efficiently and reduce costs.

We understand the challenges of working in natural environments. Our systems play a key role in improving water quality and plant efficiency, while allowing for early warning and rapid response to events such as algal blooms and floods.

Every environment is unique. Talk with our hands-on applications specialists, who can assist you with your specific monitoring needs.

Applications

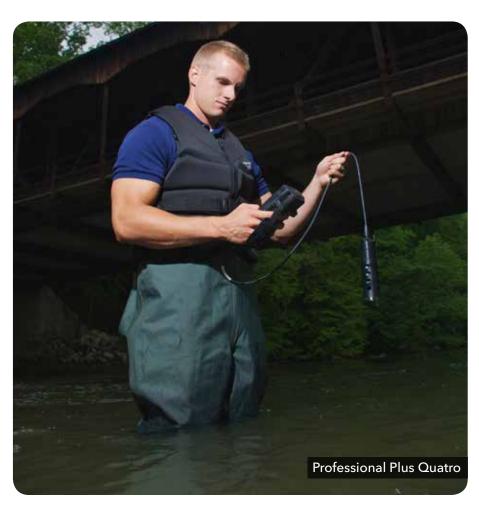
- Beach Sampling
- Discharge Sampling
- Dredging Sampling
- Compliance Sampling
- Construction Run-off Sampling
- Estuary Sampling
- Lake Sampling
- Source Water Sampling
- Stream and River Sampling
- Stormwater Sampling

Parameters

- Ammonium/Ammonia
- Barometric Pressure
- Blue-Green Algae
- Chloride
- Chlorine
- Chlorophyll
- Conductivity
- Depth
- Dissolved Oxygen (DO)
- Nitrate
- Oxidation Reduction Potential (ORP)
- pH
- Resistivity
- Salinity
- Specific Conductance
- Temperature
- Total Dissolved Solids (TDS)
- Turbidity
- Total Suspended Solids (TSS)
- Nutrients, Metals And More

Xylem water quality sampling instruments are rugged with superior sensor technology to help you meet your critical water testing requirements. Since our development of the world's first dissolved oxygen instruments for the field, our product offering has greatly expanded to include many additional parameters.

Our portable handheld instruments have flexible sensor options and provide accurate water quality data rapidly. Rugged cases and user-replaceable sensors provide a low overall cost of ownership and make our products a worthwhile investment.

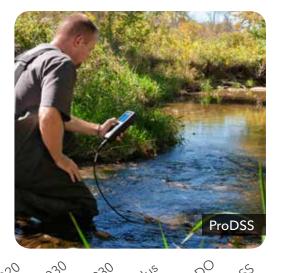




The YSI Professional Series offers a wide variety of rugged, reliable handheld instruments built to withstand harsh conditions and extreme weather conditions. Choose from user-replaceable single, dual or multiparameter cables with various length options.

All Pro Series feature:

- Rubber, over-molded IP67 waterproof case
- Rugged cables, sensors and military-spec connectors
- 3-year instrument warranty; 2-year cable warranty
- Graphic, back-lit display
- Auto-buffer recognition
- Instruments have at least 50 data-set memory to ensure data integrity
- Offered in various languages



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Temperature	•	•	•	•	•	•	•	•	•
Conductivity			•		•	•	•		•
Salinity, TDS and Specific Conductance			•		•	•	•		•
Barometric Pressure		•		•		•	•	•	•
DO (Polarographic or Galvanic)		•		•		•	•		
DO (Optical)								•	•
BOD (Electrochemical)		•		•		•	•		
BOD (Optical)								•	•
pH or ORP	•			•	•		Both		Both
Ammonium/Ammonia							•		•
Chloride							•		•
Nitrate							•		•
Turbidity									•
Depth and GPS									•



Learn More

ysi.com/proseries



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The YSI **Professional Plus** accommodates an extensive number of combinations of Pro Series sensors and cables. This compact handheld features simple calibrations, detailed GLP data, screen-specific help instructions, auto-buffer recognition, military-spec connectors, re-cal prompts, auto-stable indicators, and security passwords to help make your job easier. The Pro Plus is a true field instrument for the water professional yet accurate enough for the lab.

- Drop-tested 1 meter at all angles
- Scratch-resistant lens; viewable with polarized glasses
- 5000 data set memory
- Interval or single-event logging
- Detailed GLP data

The YSI Pro Plus **Quatro Cable** assembly allows for the measurement of temperature, conductivity, salinity, dissolved oxygen, and any two ISEs - pH, ORP, ammonium/ammonia, nitrate, or chloride. It is also flow cell compatible.

The YSI **ProODO**® is the best single parameter handheld optical dissolved oxygen (ODO) instrument on the market. It's combination of versatility, field-worthy durability, and data management are second to none. The ProODO's rugged design is verified with an IP67 waterproof rating (even without the batter cover); military-spec connectors; and rigorous drop, cable flex, and strength tests.

- Optical, luminescent technology eliminates membranes
- Low maintenance no anode or cathode
- No flow requirement and no interference from hydrogen sulfide or other gases
- 5000 data set memory
- Expanded DO range of 0-500%; 0-50 mg/L
- USB connection powers the instrument
- Interval or single-event logging
- Free Data Manager Software allows export of graphical / tabular data



ProODO®



The YSI **ProDSS** (Digital Sampling System) multiparameter sampling instrument is the ultimate digital sampling and profiling system, measuring up to 17 critical parameters with YSI's smart, digital sensor technology. An instrument created based on customer demands, this handheld can measure turbidity and depth (optional) in addition to pH, ORP, optical DO, conductivity and more.

There are many options when "building" a ProDSS system. You can choose cables up to 100 meters with or without a depth sensor and each of the 4 sensor ports can accept any ProDSS smart sensor. The handheld is available with or without GPS.

- Digital smart sensors are automatically recognized by the instrument and store calibration data
- User-replaceable cables and sensors
- KorDSS software (included) and USB on-the-go connector assist with data management
- Color display and backlit keypad; menu-driven operation
- Rechargeable long-life lithium-ion battery; ensures reliability and minimizes waste
- 4 sensor ports accept any ProDSS smart sensor
- Optional depth sensor and up to 100-m cable lengths
- Large memory (>100,000 data sets) with extensive site list capabilities
- Multiple languages: English, Spanish, Portuguese, French, German, Italian, Japanese, Norwegian, and Chinese









The WTW **Turb® 430 IR and Turb® 430 T** are reliable and easy to use rugged instruments for rapid turbidity measurements in the field.

- High accuracy in low range turbidity
- Measures up to 1,100 Nephelometric Turbidity Units (NTU) with automatic ranging
- Intuitive calibration and measurement
- Data storage with sample ID
- AQA with calibration protocol
- Large, easy to read backlit display
- Nephelometric turbidity measurements at 90° scattered light angle
- The Turb® 430 IR meets the DIN 27027/IS07027 requirements and the Turb® 430 T meets those of the US EPA 180.1.



pHotoFlex Portable Colorimeters are rugged, waterproof, multiparameter colorimeters ideal for the field. The instruments feature a large, backlit display, waterproof rating, data logging with the ability to export data to a computer using LSdata software, user-defined programs.

- Intuitive calibration and measurement
- Data storage with sample ID; 100 data sets with pHoto Flex STD and 1,000 data sets with pHotoFlex pH
- Large, easy to read backlit LCD display
- IP67 waterproof case
- Flexible, fixed adapter for various cell types features a flip design to accomodate a variety of heights and diameters
- ~138 tests (pHotoFlex pH); ~85 tests (pHotoFlex STD)
- PC connectivity to manage data
- BNC connection allows pH measurements directly and to measure the pH dependent parameter NH,









The WTW **IDS Multiparameter Profiling Sonde** with digital depth measurement for accurate depth readings alongside other parameters in a compact profiling instrument.

- Simultaneous measurement of optical DO, pH or ORP, temperature, and conductivity
- Built-in barometric pressure compensated depth sensor

WTW MPP 930 IDS

- Three-channel multiparameter sonde for simultaneous profile measurements of up to three parameters including depth and temperature
- Typical applications are limnological profile measurements but also other studies of water bodies down to 100 m (328 ft)

WTW MPP 910 IDS

• Slender single-parameter sonde for simple measurement with interchangeable sensors.







The SonTek **CastAway®-CTD** is a small, lightweight, simple-to-deploy conductivity, temperature and depth (CTD) instrument that provides profiling data in minutes.

- Instantaneous profiles of temperature, salinity, and sound speed
- Fast sampling and sensor response (5 Hz)
- Easily review data on built-in LCD
- Measures down to 100 m (328 ft)
- Built-in GPS records position, date, and time
- Bluetooth wireless data download
- No user calibration required
- No tools, computers or cables required
- HYPACK® integration: Simply cast and click, and sound speed data will auto-import via Bluetooth into HYSWEEP®



The YSI **EXO1 and EXO2 Multiparameter Sondes** are rugged, small sondes suitable for water quality sampling and profiling measurements. Automatically configure a sonde with different sensors for different applications in minutes.

- Surface and groundwater sampling and monitoring down to 250 m (828 ft)
- Bluetooth wireless communication
- Quick and easy calibration of multiple sensors
- Four (EXO1) or seven (EXO2) user-replaceable sensors and an integral pressure transducer for depth

Sensor options include: temperature/conductivity, pH/ORP, optical dissolved oxygen, turbidity, total algae and Fluorescence Dissolved Organic Matter (fDOM)



sontek.com/castaway-ctd exowater.com ysi.com/exo2

Xylem Water Quality Monitoring multiparameter sensor instruments, provide reliable data for baseline and early warning water quality studies. These continuous monitoring instruments are ideal for long-term monitoring in environments such as rivers, lakes and estuaries.

Continuous water quality monitoring keeps you one step ahead of harmful algal blooms, sediment plumes, and low dissolved oxygen events.



Applications

- Algal Bloom Monitoring
- Compliance Monitoring
- Dam Removals
- Dredging
- Estuary Monitoring
- Lake Monitoring
- Real-time Alerts
- Saltwater Intrusion
- Source Water Monitoring
- Stream And River Monitoring
- Total Maximum Daily Load (TMDL) Assessment

Parameters

- Blue-green Algae
- Chlorophyll
- Conductivity
- Depth / Level
- Dissolved Oxygen
- CDOM-fDOM
- ORF
- Photosynthetically Active Radiation (PAR)
- Hq
- Rhodamine
- Specific Conductance
- Salinity
- TDS
- Total Suspended Solids (TSS)
- Temperature
- Turbidity



The YSI **EXO2 Multiparameter Sonde** is a rugged, flexible and future-oriented platform for long-term, continuous monitoring in inland and coastal applications down to 250 meters (828 feet).

- Six user-replaceable sensors, a central wiper to keep sensors clean of biofouling, and an integral pressure transducer for depth
- Seamless integration into monitoring systems
- Flexible sensor payload/configurations
- Welded titanium sensors and bulkhead
- Wet-mateable connectors resist corrosion
- Welded housings and double o-rings prevent leaks
- Anti-fouling components help to protect data integrity and extend deployments to more than 90 days

Our Storm Solution (see pg. 27) is a great way to easily collect realtime data from your EXO advanced water quality sonde. Pair with our Integrated Systems for a complete data monitoring solution (see pg. 33).





The EXO platform was built out of two decades of continuous underwater data collection. It has been designed to live underwater, and survive the challenges of this demanding environment. New connectors and advancements in material science resulted in a monitoring platform that will last for the next decade.

In continuous monitoring applications extending deployment is critical to success and cost savings. A central wiper system was introduced on **EXO** to remove bio-fouling that accumulates during deployments. Additionally, optical sensor faces are orientated in a plane, making the cleaning mechanism **25% more effective** than previous models. These changes result in longer deployments and less data drift.

With the addition of the new **Wiped Conductivity and Temperature Sensor** (YSI.com/WipedCT) to the **EXO**platform sensor suite, we're contastly pushing the limits of our long-term deployment technology.

EXO is all about the data. Continuous data collection exposes events and natural cycles that can be overlooked with a periodic sampling program. Data drift can be avoided on **EXO** because of its superior anitfouling.







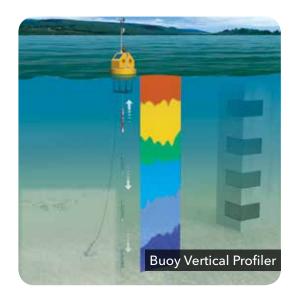


exowater.com ysi.com/exo2

No Training? No problem.
Unprecedented customer support with our on-demand series of Sonde training videos.
Visit **EXO-University.com** to learn more.

YSI **Vertical Profiling Systems,** fixed on structures such as piers or floating on pontoons and buoys, provide an in-depth view of water quality throughout the entire water column

- 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
- Real-time data transmission provides alarming and alerting of changing water quality data









Flow Measurement

Xylem flow measurement instruments use acoustic Doppler sensors for measuring water velocity and flow in surface water environments such as rivers, lakes, and canals.

With water conservation demands growing every year, accurate and reliable flow measurements have become critical to water management decisions. Our solutions provide you with high precision flow measurements in less time than ever before.



Applications

- Flood Assessment
- Irrigation
- Natural Stream Flow
- Stream Indexing
- Wading / Non-wading Discharge
- Wastewater Effluent

Parameters

- Channel Definition
- Depth / Bathymetry
- Discharge
- GPS Positioning
- Temperature
- Velocity

Flow Measurement



The SonTek **RiverSurveyor®** accurately measures velocity profiles and discharge from moving boats or platforms, such as our hydroboard, in open channels.

Multiple acoustic frequencies fused with precise bandwidth control, produce robust and continuous shallow-to-deep measurements.

- 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
- HydroSurveyor-M9 bathymetric surveying upgrade now integrated with HYPACK®! (see pg. 31)







Flow Measurement



FlowTracker2

The new SonTek FlowTracker2® (FT2) handheld Acoustic Doppler Velocimeter (ADV®) has all the technology you have grown to know and trust with the original FlowTracker, but now comes with functional, modernized features (Bluetooth, GPS and large color screen, to name only a few).

FT2 handheld software is intuitive, easy to navigate and includes real-time plots of point data, QC parameters, and measurement verticals, giving you everything you need ata-glance. Get defensible data correctly, the first time, every time, and minimize data handling back at the office. Here is a short list of time-saving, fool-proof features:

- Embedded GPS for georeferencing with automatic or manual fixes
- Improved ADV acoustics: faster pinging, lower noise and better standard error
- Battery life icon on the screen at all times. Pre-load the spare cartridge and replace, even mid-measurement, with no data loss
- Detachable probe with extension cables to customize cable length up to 10m
- Probes and handhelds are interchangeable–flexibility within agency teams and when sending equipment for service
- Set up and save templates—no need to re-enter data every time you visit a site
- Bluetooth or direct USB interface with PC
- Audio prompts



Applications

- Flood Alerts
- Flow Measurement
- Non-contact Water Level Measurement
- Real-time Alerts
- Remote Data Delivery
- Reservoir And Lakes
- Rivers And Streams
- Water Level Monitoring

Parameters

- Flow
- Meteorological
- Temperature
- Velocity
- Water Level

Xylem streamflow monitoring instruments are the ideal solution for monitoring water quantity, flow and currents. Fully self-contained systems such as the SonTek-IQ, Amazon Bubbler and our line of Storm Data Loggers are user friendly, accurate and rugged.

Incorporate water quality and meteorological sensors along with our data logging and telemetry solutions, to create a complete early warning monitoring system with real-time alarming and alerts (see page 27).

Whether looking to measure flow in rivers, streams or canals, Xylem flow monitoring and gauging instruments are renowned for their robustness, ease of use and practicality.







The YSI **Amazon Bubbler** is a smart gas purge system built with communication and ease of setup in mind. Its rugged design was developed for hydrologists and water professionals to provide long-term accurate and repeatable readings. The Amazon can be used as a stand-alone unit or sensor with a full suite of communication protocols including SDI-12, MODBUS via RS-485 or TCP, and 4-20mA. The Amazon requires no special software and is easily configured with an optional display and/or web browser GUI.

- Browser based software is easy to use and can be accessed from any device with Wi-Fi or USB connection functionality.
- Optional, continuous low-power key pad display
- Multiple communication options available
- Three measurement range options available; the 0 to 10 m range provides an accuracy of ± 2 mm, the 0 to 20 m range has an accuracy of ± 4.25 mm, and the 0 to 35 m range has an accuracy of ± 7 mm.







The **SonTek-SL** series is designed for side-looking applications on bridges, canals, rivers, and ports/harbors to collect flow and discharge data. Now, with two new (3G) models turbo-charged by our proprietary SmartPulseHD®, the SonTek-SL features accessories, mounting options, software, and a variety of integration formats to ensure it fits your application.

First time users can collect test data within minutes of receiving the SonTek-SL. Deployments require only a few minutes to configure the SL and start collecting data. This system provides the highest quality Doppler velocity data without requiring the user to become an expert on Doppler technology.

- Lightweight and easy to transport, mount, and access.
- Slim shape is easy to maintain, stays clean, and fits into just about any size manmade or natural channel.
- •Unrivaled performance in very slow (even no flow) and reversing conditions
- •Not only redundant sources of water level, the acoustic vertical beam and pressure sensor continually self-check, and pressure data are auto-corrected.



The YSI **Nile Radar** provides a way to measure water level through non-contact transmission in streams, rivers, lakes and estuaries. Its reliable interface and simple SDI-12 communication ensure seamless integration with current water monitoring stations. With three models to choose from, the Nile Series is sure to meet your water monitoring needs.

- 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 70 m (230 ft)







The YSI **Submersible Pressure Sensor (H-3123)** is specifically designed to measure ground and surface water pressure, temperature and levels. Its sleek stainless steel diaphragm and polyurethane vented cable, give the Submersible Pressure Transducer the durability it needs to survive rugged environments. Users can transmit data digitally over cable lengths of up to 1000 feet (304.8 m).

- Accuracy of 0.02%
- Robust dry air moisture barrier keeps moisture out of vent tube
- Rugged stainless steel design for long-term durability

The YSI **Absolute Shaft Encoder (H-3342)** offers a user friendly way to measure water level in a stilling well. Monitor the position of a float and pulley with a magnetic sensor to minimize static sensitivity for enhanced performance. This series is compatible with most data loggers.





The **SonTek-IQ®** is a fully self-contained system that offers a flow monitoring solution for canals, and water monitoring sites with depths ranging from 0.08 m (0.3 ft) to 1.5 m (5 ft) for the IQ Standard, and 5 m (16 ft) for the IQ Plus.

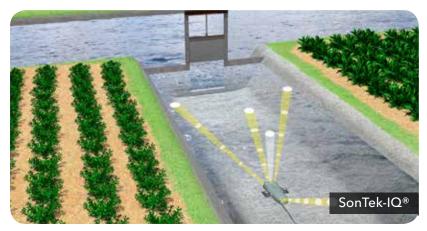
- Specifically designed for open channels
- Velocity profiles in 3D with cells as small as 2 cm (0.8 in)
- Robust measurements in complex flow conditions
- Velocity, level, flow and total volume measurement in water depths as shallow as 0.08 m (0.3 ft)
- Self-calibrating water level using vertical beam and pressure sensor



The **SonTek-IQ® Pipe** offers a flow monitoring solution for most industrial or agricultural applications, and can provide accurate flow values in pipes from 0.46-5.0 m (1.5-16.0 ft).

- Velocity profiles in three dimensions with cells as small as 0.02 m (0.8 in)
- Robust measurements in complex flow conditions
- Velocity, level, flow and total volume in pipes with diameters between 0.46-5.0 m (1.5-16 ft).



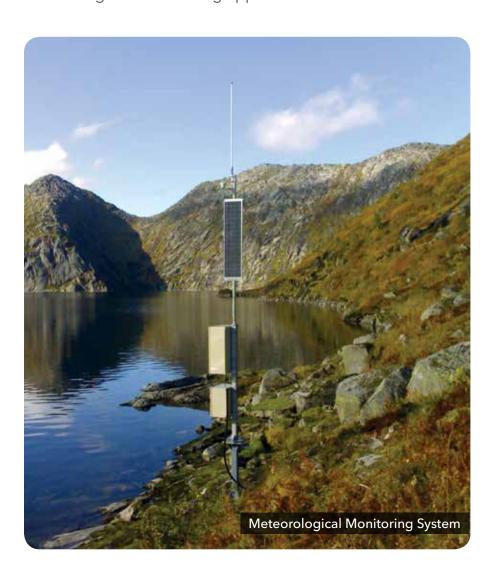




Meteorological Monitoring

Xylem meteorological monitoring systems provide accurate measurements in extreme weather conditions worldwide.

Multiple sensors, including third pary meteorological sensors, can be integrated with our systems. This provides a full meteorological monitoring station for many weather monitoring and forecasting applications.



Applications

- Atmospheric Pressure
- Episodic Events
- Real-time Alerts
- Solar Radiation Monitoring
- Stormwater Measurement
- Weather Forecasting
- Weather Monitoring

Parameters

- Barometric Pressure
- Precipitation
- Relative Humidity
- Solar Radiation
- Temperature
- Wind Direction
- Wind Speed

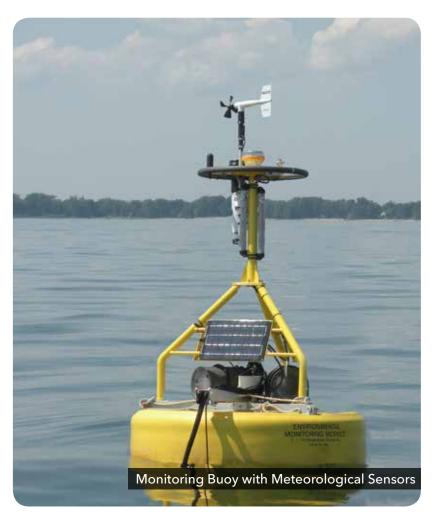
Meteorological Monitoring



PAR and All-In-One Meteorological Sensor Suite

We offer complete Meteorological Station Capability and Services to meet all of your weather monitoring needs. Everything from single sensors, to all-in-one packages and full meteorological stations that meet state climatological office requirements are available.

Our sensors and third-party sensors can be coupled with our data logger / telemetry solutions (pg. 26) and integrated into a complete monitoring solution. We also offer full installation and training services (pg. 38).





25

Meteorological Monitoring



Xylem can integrate third party sensors into Hydro-Met systems to provide a complete monitoring solution for your site. Sensors measuring parameters such as wind speed and direction, relative humidity, barometric pressure, PAR, visibility and more can be integrated into

The YSI **Tipping Bucket Rain Gauge** is designed to measure rainfall and maintain accuracy at increased rates ranging from 0-635 mm (0-25 in) per hour.

- SDI-12 output
- Magnetic reed bucket tip sensor
- Two removable stainless steel funnel screens
- Built-in microprocessor automatically corrects errors

The YSI **Air/Soil/Water/Temperature Probe** provides long-term, calibration free operation.

- Thermistor Probe
- Analog output
- Sealed, corrosion-resistant, non-conductive enclosure



Data Logging / Telemetry

Applications

- Episodic Events
- Estuaries
- Flow Monitoring
- Lakes
- Meteorological Studies
- Real-time Alerts
- Remote Data Delivery
- Streams And Rivers
- Water Level Monitoring
- Water Quality Monitoring

Parameters

- Currents
- Flow
- GPS Position
- Hydrocarbons
- Nutrients
- Meteorological
- PAR
- Velocity
- Water Level
- Water Quality

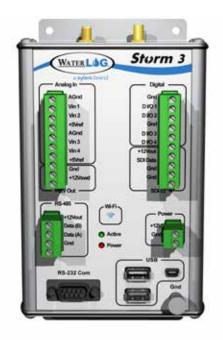
Xylem Data Logging and Telemetry Instruments provide reliable data collection and real-time data transmission in extremely harsh conditions. Integrate multiple sensors, including third party sensors, with our Data Logging and Telemetry systems to provide a total monitoring solution for your sites.

We offer a wide variety of land and buoy based solutions to meet all of your real-time data needs. Our systems provide you with a 24/7 view of your data for increased data quality and early warning through alarming and alerting.





Meteorological Monitoring



The YSI **Storm 3 Data Logger** is an innovative data logging system that easily configures and collects a wide variety of data, and sends alerts using the browser-based graphical user interface.

- Data logger compatible with wide range of telemetry options such as Wi-Fi, cellular, GOES satellite, spread-spectrum radio and commercial satellite
- Built-in sensor library and help menus for quick set-up and troubleshooting
- The Storm3 is also available as a turn-key system integrated into a NEMA 4X enclosure complete with telemetry, battery and solar panel. Just add sensors for an instant monitoring station (see page 32 for more information).

The YSI **Storm Local** software is installed on a local PC or server and allows you to remotely download data from your cellular or GOES telemetry enabled Storm data loggers.

The YSI **Storm Central** cloud-hosted data solution collects data from the Storm data logger in real-time. Communicate through devices such as cell modems, GOES, and other transmitters. In addition, the Storm Central service is able to connect to your existing GOES stations, providing an immediate view of your data.

- View data in graphical and tabular form
- Alarm and alert system allows remote monitoring of site
- Receive automated alerts via email, SMS text message or through color change of map icons





Data Logging / Telemetry



YSI XL Series Data Collection Platforms (DCP) are a smart way to collect reliable data from systems under extreme environmental conditions. Used in many hydrological and meteorological applications including stream/river monitoring, irrigation, flood warning and many others.

- Fully integrated HDR transmitter capable of communicating through GOES/METEOSAT/INSAT satellites
- Menu-driven setup
- Integral GPS with random and self-timed transmissions
- Near real-time data retrieval



Xylem's bathymetry, velocity and water quality mapping

tools allow you to get a complete three-dimensional picture of your stream, river, lake, reservoir or estuary. Our tools collect the data you need to produce comprehensive water quality, velocity, and bathymetry maps.

Our surveying and mapping tools are also a great way to enhance your long-term monitoring programs. Combining spatially-intensive data from your mapping with temporallyintensive data from your continuous monitoring stations gives you an unprecedented understanding of your waterway.



Applications

- Algal Bloom Monitoring
- Baseline Monitoring
- Bathymetry
- Bottom Mapping
- Discharge Mapping
- Drinking Water Intake Monitoring
- Event Response
- Pollution Mapping
- Reservoir Mapping
- Reservoir Monitoring
- Velocity Profiles

Parameters

- Bathymetry
- Blue-green Algae
- Chlorophyll
- Conductivity
- Currents
- Density
- Dissolved Oxygen
- ORP
- pH
- Salinity
- Sound Speed
- Specific Conductance
- Temperature
- Turbidity
- Velocity

NEW! Both the HydroSurveyor-M9 and CastAway-CTD are now integrated with HYPACK hydrographic surveying software.



The Sontek **HydroSurveyor**TM**-M9** collects bathymetric, water column velocity profile, and acoustic bottom tracking data as part of a hydrographic survey.

- Includes Acoustic Doppler Profiler (ADP) platform and powerful data collection software
- Full water column velocity mapping, 5-beam depth sounding and acoustic bottom tracking
- Water sound speed corrections done right in the field when seamlessly integrated with CastAway-CTD
- Data format readable by industry-standard HYPACK software
- Mounted over the side or towed behind a survey vessel or other floating platform
- Profile water currents while underway



The SonTek **CastAway®-CTD** is a small, simple, calibration-free Conductivity, Temperature and Depth (CTD) instrument that provides data in minutes. The CastAway-CTD's sound speed velocity data can be used to correct bathymetric measurements made with acoustics. Our HydroSurveyor system automatically integrates in your CastAway-CTD cast data for on-the-fly corrections.

- Instantaneous profiles of temperature, salinity, and sound speed
- Fast sampling and sensor response (5 Hz)
- Easily review data on built-in LCD
- Measures down to 100 m (328 ft)
- Built-in GPS records position, date, and time
- Bluetooth wireless data download
- Sound speed corrections for bathymetric measurements









HYPACK® is one of the most widely used hydrographic surveying software packages in the world. Whether you are collecting single beam, side scan, magnetometer data or just positioning your vessel in an engineering project, HYPACK® gives you the power needed to complete your task.

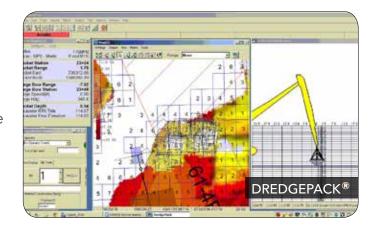
- Full Navigation with AIS Integration
- S57 Chart Update and Real-Time Verification
- Real-time 3D Terrain Model with AVI recording
- Mapping, plotting, charting, and data visualization tools

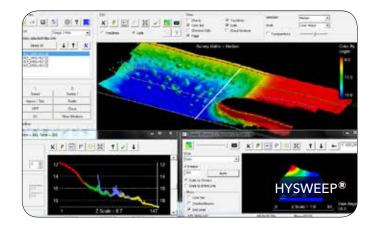
The **DREDGEPACK®** software is designed to improve your work efficiency for dredging control on Cutter Suction, Hopper, Excavators and Bucket Dredges. It allows the dredge operator to monitor and record digging operations, maximize production, and reduce the risk of dredging errors.

- Real-time imaging, targeting, QC.
- Powerful Graphical/Automated Editing
- CUBE data Processing
- Performance and Statistical Reports

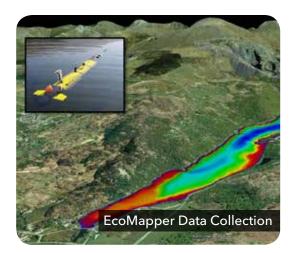
HYSWEEP® is our Multibeam, Backscatter and Topographic Laser Software for Calibrating, Collecting and Processing Data. This powerful module gives you the tools needed to complete your task in a system your surveyors can master.

- Full Navigational and Dredging support
- Meets USACE Silent Inspector Requirements
- Precise Dredge Positioning
- DTM with Volumes and Reports
- OPC compliant and PLC interface capable





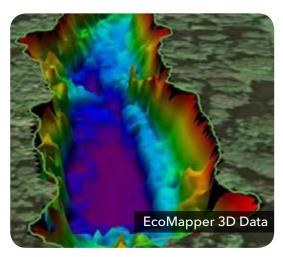




The YSI **i3XO EcoMapper**® **AUV** is a unique autonomous underwater vehicle designed specifically for high resolution water quality mapping, water current measurements, bathymetry and side scan SONAR imagery over large areas.

- Completely autonomous and deployable by one person
- Collect high-resolution data without getting your feet wet
- Easy-to-use mission planning software
- Up and down looking Doppler velocity log
- Iridium tracking capabilities
- 8-12 hour run times at speeds of 1.3-1.8 m/s (2.5-3.5 knots)
- Continuous data collection through the entire water column







Xylem brands work together—providing a total solution to ensure you meet your budget without compromising the integrity of your data. Our complete, real-time monitoring solutions offer early warning and the critical water and weather data needed before, during and after episodic storm and flood events.

International Regional Integration Centers and YSI Integrated System and Services centers provide a comprehensive range of water monitoring solutions by integrating Xylem and third-party sensors onto single or multi-platform systems, offering turn-key systems and services for simple-to-complex needs. Let our experienced integration teams design a custom monitoring solution and field services for you that meet the unique monitoring and data delivery needs of your specific project.



Applications

- Baseline Studies
- Bays
- Construction Monitoring
- Dredging
- Emergency Response
- Estuaries
- Fisheries
- Lakes
- Non-point Source / TMDL
- Point Source / Discharge
- Power Plant Discharge Monitoring
- Source Water
- Stormwater & Combined Sewer Overflows (CSO)

Parameters

- Currents
- Hydrocarbons
- Meteorological
- Nutrients
- PAR
- Water Quality

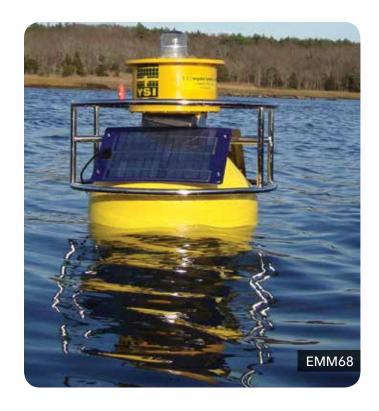


The YSI **EMM25 Sonde Spar** is a low-cost buoy option for short-term or long-term monitoring. Its simple design allows for rapid deployment in response to events or emergencies.

- Small and lightweight for one-person deployment
- Ionomer foam hull survives impacts, punctures and vandalism
- Central deployment tube for simple and fast integration of YSI water quality sondes or other devices
- Safe and secure deployment with locking well cap and flashing beacon

The YSI **EMM68 Harbor Buoy** is a small and versatile buoy ideal for project-based deployments. Its simple set-up and integration provides easy access to water quality data in a variety of applications, such as construction, dredging and discharge monitoring.

- Quick deployment from the shoreline or small boat
- Collects data in waters as shallow as 1.8 m (6 ft)
- Quick response in emergencies
- View data in real-time via remote telemetry (Like the Storm Solution, pg.27)
- Serviceable without a diver









The YSI **EMM700 Bay Buoy** is a medium-sized monitoring platform ideal for estuarine and inland water use. Its rugged structure supports a wide variety of water quality, water velocity

The YSI **EMM350 PISCES** is a lightweight, towable pontoon platform ideal for estuary, river and other high current applications. Its rugged structure supports a wide variety of water quality, water velocity and meteorological instrumentation, data collection and telemetry systems (see pg.26).

- Easy to deploy with two people, and towable
- Integrates data logging, water quality sensors and remote telemetry
- Meteorological sensor and current meter options
- High profile for visibility in navigable waterways
- Options for multi-depth sampling and flow-through cell configuration

and meteorological instrumentation, data collection and telemetry systems (see pg.26).

Compact platform deployable from a small vessel
Heavy-duty foam hull survives collisions
Integrates data logging, sensors and remote telemetry
Withstands harsh conditions in lakes, ponds, reservoirs, and estuarine applications
Marine-grade anti-fouling paint reduces the accumulation of biofouling organisms



Xylem Storm Turn-Key Telemetry Systems—are designed for quick and easy installation at fixed monitoring locations. These systems are based around our innovative Storm 3 data logger and integrate data from our multiparameter water quality, meteorological, and streamflow monitoring sensors. Systems are available with a wide variety of real-time communications options (cellular, GOES satellite and WiFi), are housed in a NEMA 4X enclosure, and include a battery, solar panel and antenna. Solid weather-proof connectors allow for quick connection of our multiparameter water quality sondes (see EXO pg. 12). Meteorological, water velocity, flow and water level sensors are easily connected inside the enclosure (see pg. 18 and 23 for these sensors).

These systems include 1 year of our Storm Central web hosted data solution, and where applicable, 1 year of cellular telemetry. Please contact your local sales office for more information.

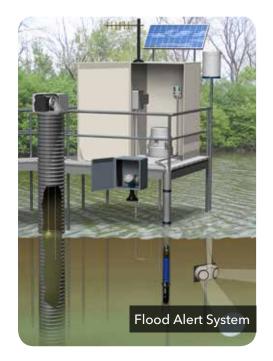
While Xylem offers a wide-range of Turn-Key Telemetry Systems we can also custom design a solution for your more complex monitoring and telemetry needs. Many of our integrators are former customers who have years of experience in the field solving complex monitoring challenges.

Whatever your application, whatever your mission, Xylem has a solution for you.



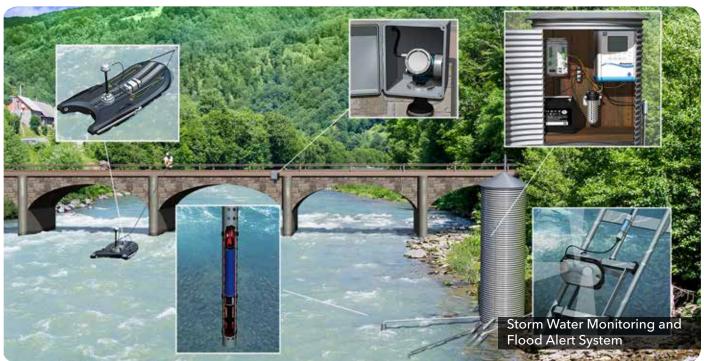






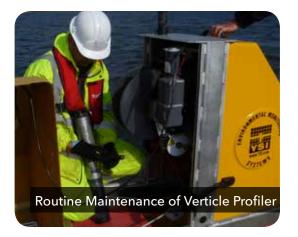
Xylem Storm Water Monitoring Systems and Flood Alert Systems are custom designed to your specifications. These are versatile, advanced systems to measure water quality, level, water velocity, total flow/discharge, and meteorological parameters in real-time to meet almost any compliance criteria and protect public safety.

- Components include: level, precipitation, water quality, velocity and flow sensors and automated samplers
- Data loggers initiate sampling routines based on event criteria
- Notifications when a sample has been taken and of other alarm criteria, such as a parameter exceeding a maximum limit
- Deliver real-time data via cellular or radio modems to individual computers or customized private or public web sites
- Portable systems: aluminum chests or fiberglass clamshell boxes
- Permanent systems: mast-mounted, metal walk-in sheds or constructed walkways and platforms





Services



Xylem's Services Divisions can partner with you to provide:

- Data Collection And Delivery
- Integration And Testing
- Long-Term Service Contracts And Extended Warranties
- On-site Repairs
- On-site Training
- Operation And Maintenance
- Project Definition
- Reports And Site Evaluation
- Startup And Commisioning
- Systems Design , Construction And Installation



Water Quality, Streamflow and MET Monitoring Stations

- Sites customized to your monitoring needs
- Surface mount enclosures for well top and stream gauging
- Rugged, high quality monitoring platforms
- Multiple sensor integration
- Transmitters capable of communicating through cellular radio GOES/METEOSAT/INSAT and commercial satellites
- Construction and installation of platforms, walkways, housings, and towers



Field Monitoring, Operation and Maintenance

- Site location selection and layout
- Data collection method assessment and recommendation (communication method/telemetry, etc.)
- Selection and integration of instrumentation, data collection and data presentation
- Baseline studies and event-based data collection services
- Experience with harsh environments and weather environments
- Software updates, data provisioning and reporting
- Sensor swaps and regular instrument maintenance and calibration
- Routine station maintenance and on-site repairs
- Ongoing quality assurance / quality control



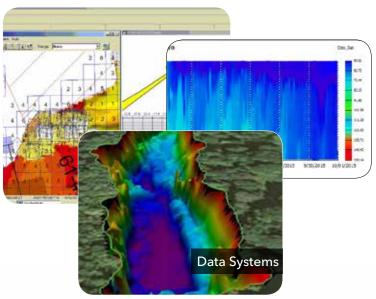








Services



Data Visualization

- Customized interfaces to your database population requirements
- Front-end display for data presentation in graphical or animated format
- Web-hosted data solutions
- Custom configured Data Acquisition Systems to meet your budget
- Third-party database interface and data display options
- Private network and enterprise software solutions



Learn More

Water Quality Sampling Professional Series.....vsi.com/proseries Professional Plus......ysi.com/proplus ProODO®.....vsi.com/proODO Pro1030 pH or ORP & conductivity.......ysi.com/pro1030 Pro1020 field dissolved oxygen, pH & ORP......ysi.com/pro1020 Turb® 430 IR and Turb® 430 T bit.ly/Turb430 IDS Multiparameter Profiling Sonde bit.ly/IDSdepthl MPP 930 IDS.....xylemanalytics.co.uk/MPP930 MPP 910 IDS.....xylemanalytics.co.uk/MPP910 CastAway® CTD.....sontek.com/castaway EXO1 and EXO2 Multiparameter Sondesexowater.com **Water Quality Monitoring** EXO2 Multiparameter Sonde......ysi.com/exo2 Flow Measurement RiverSurveyor®.....sontek.com/riversurveyor FlowTracker® Handheld ADV®.....sontek.com/flowtracker FlowPack Software **Streamflow Monitoring** Self-contained Bubbler (H-3553).....ysi.com/amazon Submersible Pressure Sensor (H-3123)...... ysi.com/H-3123 Argonaut®-SL sontek.com/argonautsl Nile Radar Sensor.....ysi.com/nile SonTek-IQ® sontek.com/IQ SonTek-IQ® Pipe......sontek.com/IQ









More Information

Meteorological Stations Tipping Bucket Rain Gauge Air/Soil/Water/Temperature Probe	ysi.com/rain-gauge
Data Logging / Telemetry	
	stormcentral.waterlog.com ysi.com/storm3 ysi.com/H-522
Surveying & Mapping	
CastAway® CTD HydroSurveyor™ EcoMapper™ AUV HYPACK DREDGEPACK HYSWEEP	sontek.com/hydrosurveyor ysisystems.com/ecomapper bit.ly/HYPACK bit.ly/DREDGEPACK
Systems & Services	
Turn-Key Storms, Custom Systems	
Buoys & Floating Platforms EMM25 Sonde Spar EMM68 Harbor Buoy	ysisystems.com/Sonde-Spar

Xylem | 'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team 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.xyleminc.com



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