xylem
Let's Solve Water

HydroMet Monitoring

COMPLETE WATER AND WEATHER MONITORING SOLUTIONS

YSI

a **xylem** brand

BROCHURE
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At Xylem, We Are Committed To Helping You Solve Your HydroMet Monitoring Challenges.

Our instruments are reliable

We provide a broad range of innovative equipment, capable of reliable measurements in extremely harsh conditions. Our application professionals take pride in designing, building, and servicing the high precision instruments and monitoring systems that help you collect accurate water monitoring data.

Our technology saves you time

Our instruments provide the reliable data you need to act quickly, work efficiently and reduce costs. Real-time access and automated data hosting from your network of sites minimizes trips out to the field, and provides assurance that your sites are collecting quality data.

Our application professionals understand your challenges

Every environment is unique—which is why we custom design a system that is tailored to your site. Let our experienced integration teams design a monitoring solution that meets the needs of your specific project, and provide continuous support for years to come.

Together, we can solve water.

CONTENTS

Our Analytical Brands

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.

CONNECT WITH US

YSI manufactures water quality, water level, data logging, and telemetry instrumentation for sampling, profiling and continuous monitoring.

SonTek manufactures acoustic Doppler instrumentation for water velocity measurement in oceans, rivers, lakes, canals, harbors, estuaries, and laboratories.

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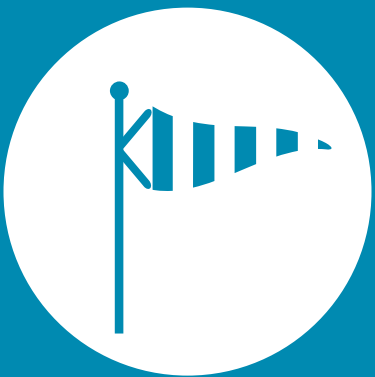• /sontekysi

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HydroMet Monitoring

Xylem Hydro-Meteorological (HydroMet) Monitoring Systems provide accurate measurements in extreme weather conditions worldwide. Whether looking to measure water in rivers, streams or lakes, Xylem brand monitoring and gauging instruments are renowned for their robustness, ease of use and practicality.

Multiple sensors, including meteorological sensors, can be integrated with our systems. This provides a full meteorological monitoring station for many weather monitoring and forecasting applications. We are committed to helping you solve your toughest HydroMet challenges.

HydroMet monitoring projects can be conducted for a variety of reasons such as flood-control, water management, effects of climate change on water resources, and the behavior of water in certain regions.

Data from HydroMet monitoring stations play a vital role in protecting against environmental hazards such as high-impact weather and flash-flooding, and provide relevant information for water resource decisions.

We realize that fully understanding rainfall, streamflow, and other weather/climate events is not possible without accurate monitoring data. Xylem brands work in conjunction, providing a total solution to ensure you meet your budget without compromising the integrity of your data.

Xylem brand monitoring and gauging instruments are renowned for their robustness, ease of use and practicality.

Monitoring station containing a YSI Storm 3 Data Logger, and meteorological sensors.

Monitoring Buoy containing a YSI Sonde, and meteorological sensors.

Xylem monitoring instruments

are rugged and reliable, with superior sensing technology to help meet your HydroMet monitoring site requirements.

Our continuous, remote monitoring solutions transmit near real-time data to help keep you one step ahead of monitoring challenges, and provide cost-effective solutions.
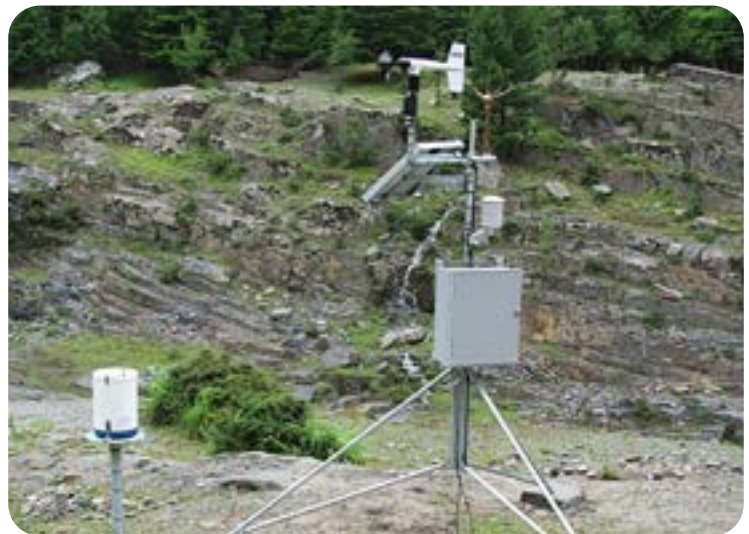
System Examples

Monitoring tower containing a YSI Data Logger, and meteorological sensors

Xylem portable or permanent HydroMet monitoring systems are custom designed to meet your specifications. These versatile, advanced systems meet almost any compliance criteria and protect public safety. Typical measurements include water level, flow, velocity, water quality, relative humidity and air temperature, precipitation, wind speed, and solar radiation.

- Portable systems: aluminum chests, fiberglass clamshell boxes, and turn-key enclosures

- Permanent systems: mast-mounted, metal walk-in sheds or constructed walkways and platforms

- Deliver real-time data via cellular or radio modems to individual computers or customized private or public web sites

- Notifications when a sample has been taken and of other alarm criteria, such as a parameter exceeding a maximum limit
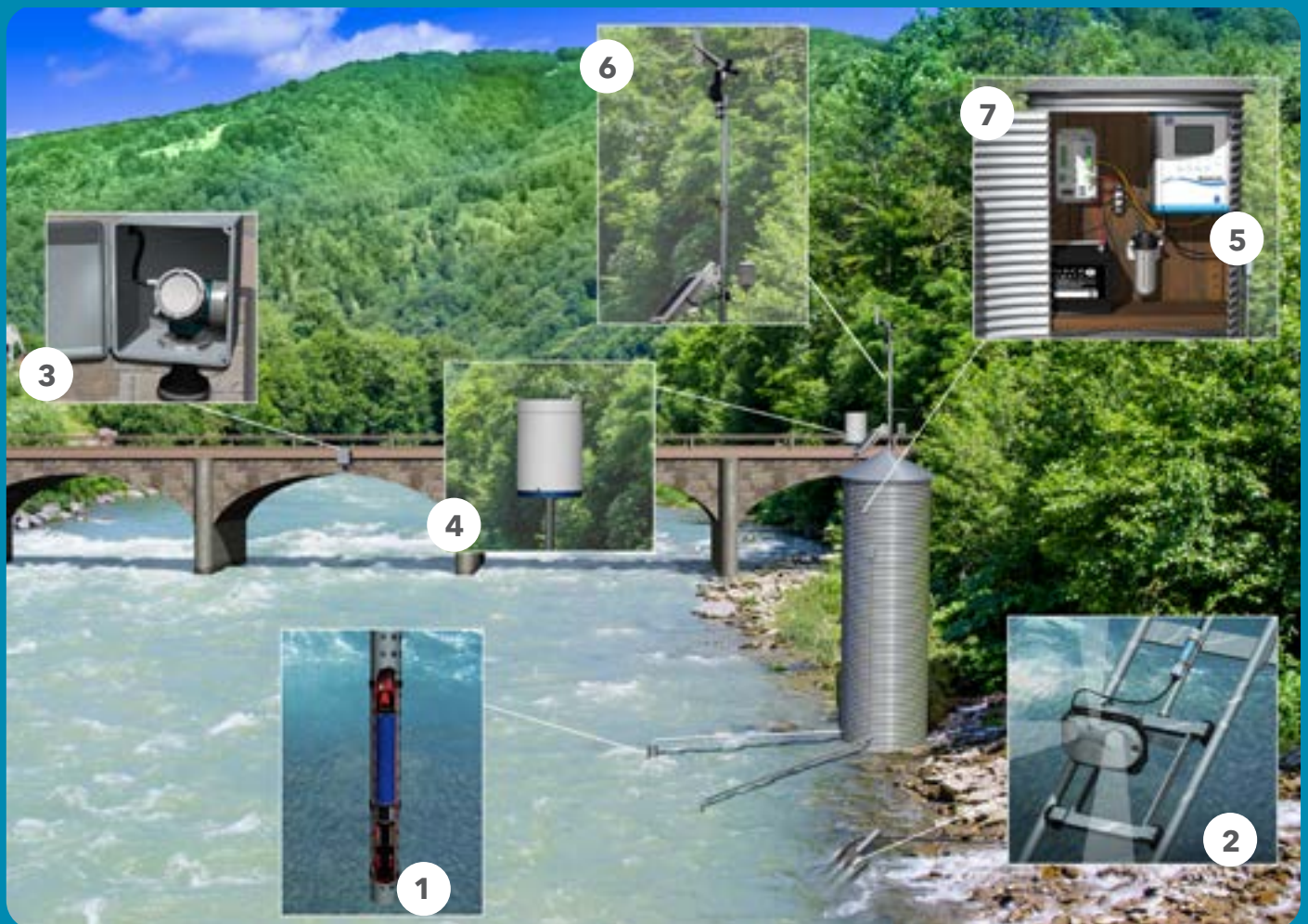

Monitoring tower containing a YSI Data Logger and meteorological sensors

Turn-Key monitoring station containing a YSI Data Logger, Rain Gauge and other meteorological sensors.

Permanent HydroMet monitoring systems such as mast-mounted, metal walk-in sheds or constructed walkways and platforms, offer a secure option for long-term monitoring. The metal gauge house, riverbank installation, and bridge mounted NEMA-4X rated enclosure below is an example of a custom designed HydroMet system and includes the following instruments:

1. YSI EXO2 Sonde
2. SonTek-SL
3. YSI Nile Radar
4. YSI Rain Gauge
5. YSI Amazon Bubbler
6. Third party Wind Sensor, Pyronometer, Relative Humidity Sensor, and Solar Panel
7. YSI Storm 3 Data Logger with Storm Central cloud data hosting service

System Examples

SonTek-IQ canal installation as part of a HydroMet station

Xylem flow monitoring instruments offer solutions for permanent HydroMet monitoring systems with complex flow conditions. Whether looking to measure flow in rivers, streams or canals, Xylem flow monitoring instruments are renowned for their robustness, ease of use and practicality. Incorporate with our data logging and telemetry solutions (see page 8), and meteorological sensors to create a HydroMet monitoring system with real-time alarming and alerts.

Capable of working in man-made and natural channels, the **SonTek-IQ** can collect flow (area-velocity) and volume data in as little as 8 cm (3 in) of water.

- Specifically designed for open channels
- Velocity profiles in 3D with cells as small as 2 cm (0.8 in)
- Self-calibrating water level using vertical beam and pressure sensor

The **SonTek-SL** series is designed for side-looking applications on bridges, canals, rivers, and ports/harbors to collect velocity and discharge data. This system provides the highest quality Doppler velocity data without requiring the user to become an expert on Doppler technology.

- Slim shape is easy to maintain, stays clean, and fits into just about any size manmade or natural channel.
- Lightweight and easy to transport, mount, and access.

Example of a typical SonTek-SL1500 concrete lined canal installation as part of a HydroMet station.

Portable HydroMet monitoring systems

provide a secure monitoring option for deployment at multiple sites. We offer a wide variety of land and buoy based solutions to meet all of your real-time data needs.

Designed for easy lifting, **portable aluminum chests** allow site flexibility while maintaining a secure monitoring solution.

- Vandal-resistant, flexible conduit provides sensor connection to the box

- Aluminum chest or fiberglass clamshell box options available

Portable aluminum chest monitoring system containing a YSI Bubbler, Sonde, Data Logger, and meteorological sensors.

Buoy based solutions offer quick deployment,

from the shoreline or small boat. Through-hull penetration for monitoring equipment makes routine servicing simple, fast, and secure.

- Remote telemetry options allow quick acceess to monitoring data

- Withstands harsh conditions in lakes, ponds, reservoirs, and estuarine applications

- Marine-grade anti-fouling paint reduces the accumulation of biofouling organisms

- Most models are serviceable without a diver

Monitoring Bouy containing meteorological sensors.

System Examples

Turn-key monitoring systems are based around our innovative **Storm 3 data logger** and includes a NEMA-4X rated enclosure. Designed with Wi-Fi connection, the Storm 3 allows easy configuration and data collection using the browser-based graphical user interface (GUI), with all standard web browsers on PCs, tablets, and smart phones.

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.

- Data logger compatible with wide range of telemetry options such as Wi-Fi, cellular, GOES satellite, spread-spectrum radio and commercial satellite

- View your data 24/7 for increased data quality and early warning through alarming and alerting

Example of a turnk-key monitoring system containing a YSI Storm 3 Data Logger.

Storm Central Cloud-hosted Data Solution shown on multiple platforms

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

Xylem Integrated Systems and Services professionals can provide professionally integrated HydroMet stations that are consistent with the technology used by local state climatology offices, the National Weather Service, and National Oceanic and Atmospheric Administration (NOAA) requirements. We can provide complete free-standing tower installations meeting the 3 meter and/or 10 meter height requirements with industry leading lighting protection. Our HydroMet professionals can utilize a variety of third party sensors from most major manufacturers to meet your specific monitoring network needs— providing a complete monitoring solution for your site.

Let our experienced integration teams design a monitoring solution that meets the needs of your specific project, and provide continuous support for years to come.

10 meter monitoring tower containing meteorological sensors, data logger, and cellular telemetry.

Monitoring Buoy containing meteorological sensors.

Turn-key monitoring station containing a YSI Rain Gauge, Storm 3 Data Logger, GOES telemetry, and meteorological sensors.

System Design

Select Xylem brand sensors from the following categories on the pick list below, to help us design a HydroMet monitoring system that meets the unique monitoring and data delivery needs of your specific project.

Contact your local sales representative or visit YSI.com and SonTek.com for detailed sensor specifications, accessory options, and more. We also offer full installation and training services.

Xylem representative installing a HydroMet monitoring solution

WATER LEVEL

Nile Radar
(502/504/517)

Designed for mounting on bridges and platforms directly over the water, the YSI Nile Radar offers a non-contact water monitoring solution in a light weight, compact instrument. 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.

- Accuracy range of ±3 mm
- Advanced mapping options

⊕ **YSI.com/Nile**

Amazon Bubbler

The YSI Amazon Bubbler is a smart gas purge system built with communication and ease of setup in mind. The Amazon Bubbler Systems rugged design was developed for hydrologists and water professionals to provide long-term accurate and repeatable readings. It 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.

- Requires no special software
- Easily configured with an optional display and/or web browser GUI

⊕ **YSI.com/Amazon**

Shaft Encoder
(H-3301/11/42)

Ideal for permanent monitoring sites, the YSI Shaft Encoder's compact, sturdy design provides a solution that does not take up a lot of space. Monitoring the position of a float and pulley with a magnetic sensor, this instrument minimizes static sensitivity, allowing for high-accuracy data.

- Built-in display with "Push to Read" button
- Absolute, optical encoder preserves correct position—even if the power is lost

⊕ **YSI.com/Shaft-Encoder**

Submersible Pressure Transducer
(H-3123)

Specifically designed to measure ground and surface water pressure, temperature and levels, the YSI Submersible Pressure Transducer can transmit data digitally over cable lengths of up to 1000 feet (304.8 meters). Unique to the Submersible Pressure Transducer is the dry air moisture barrier system, providing atmospheric compensation with no on-site calibration required.

- Simple to install and contains SDI-12 output
- Accuracy over temperature range exceeds ±3 mm (0.01 ft) of water

🌐 **YSI.com/H-3123**

METEOROLOGY

Tipping Bucket Rain Gauge
(H-3401)

Capable of maintaining accuracy at increased rates of rainfall ranging from 635 millimeters (0-25 inches) per hour, the YSI Tipping Bucket Rain Gauge has two removable stainless steel funnel screens and a rust-proof enclosure. It also has a magnetic reed bucket tip sensor and an internal leveling mechanism with a 'bulls-eye' level to ensure high accuracy data.

- Bulit-in microprocessor automatically corrects errors
- SDI-12 output

🌐 **YSI.com/Rain-Gauge**

Relative Humidity/ Temperature Probe
(H-380)

Now, with long term calibration-free operation, the YSI Relative Humidity/Temperature Probe features outputs and simple field maintanance options to fit your application.

- Sealed, corrosion-resistant and nonconductive housing resists condensation and contaminants
- Fully interchangeable HygroClip module is quicky replaced in the field with no loss of accuracy and no calibration

🌐 **Waterlog.com/Relative-Humidity**

High Performance Wind Sensor
(H-375)

The High Performance Wind Sensor is built rugged to survive harsh environments, yet light weight enough to produce accurate horizontal wind speed and direction measurements. It's simple design and corrosion-resistant construction make it ideal for a wide range of wind measuring applications. Pair this sensor with any YSI data logger for increased reliability and data collection in real-time.

- Operating temperature range of -50 to +60° C
- Precision grade, stainless steel ball bearings

🌐 **Waterlog.com/Wind-Sensor**

System Design

Barometric Sensor
(H-378)

While housed inside a vented data recorder enclosure for protection and easy interfacing, the Barometric Sensor provides accurate atmospheric pressure measurements for your site. This highly stable, rugged instrument is tested for extreme conditions with operating temperature ranging from -50 to +60°C

- Rugged enough for remote extreme conditions
- Temperate compensated to ensure accuracy

⊕ **Waterlog.com/Barometer**

Silicon Pyranometer
(H-3791)

The Silicon Pyranometer combines ruggedness and reliability, bringing you a unique sensor designed to measure global solar radiation within all types of applications and studies. Its highly stable silicon photovoltaic detector, is mounted within a fully cosine-corrected miniature head ensuring this sensor runs smoothly in everything from freezing cold temperatures to blistering heat.

- Operating Temperature -30 to +70° C
- No error inducted from orientation

⊕ **Waterlog.com/Pyranometer**

WATER QUALITY

EXO2 Multiparameter Sonde

Suitable for long-term, continuous monitoring inland and coastal applications down to 250 meters (828 feet). With wet-mateable connectors, smart sensors, and an anti-fouling wiper, the YSI EXO2, 6-port water quality sonde exceeds others in the industry.

- Welded titanium sensors, housings, and double o-rings
- Flexible sensor payload/configurations

⊕ **YSI.com/Exo2**

Air/Water/Soil Temperature Sensor
(H-377)

The YSI Air/Soil/Water Temperature Probe measures air, soil, or water in temperatures ranging from -40 to +80° C. The probe is calibration free, provides fast response and high accuracy. Its sealed, corrosion-resistant, and non-conductive enclosure ensures durability in rugged environments.

- Compatible with the H-350 XL and H-500 XL data loggers
- Long-term calibration free operation

⊕ **YSI.com/Temperature-Sensor**

VELOCITY AND FLOW

SonTek-SL

Designed specifically for side mounting on bridges, canal walls, or riverbanks, the SonTek SL's low-profile housing makes installation easy. With three models to choose from, the SonTek-SL can be used in channels as small as you can jump across to rivers as wide as the Amazon.

- Lightweight and easy to transport and mount
- Customizeable, flexible setup options to suit a variety of applications

⊕ **Sontek.com/Sontek-SL**

COMMUNICATION

Storm Central

Data hosting through Storm Central allows data download from any computer or mobile device with an internet connection. Custom alarm notifications via SMS text and/or email let you know when a sample has been taken, and of other alarm criteria—such as a parameter exceeding a maximum limit.

- Automated data push from data logger allows less frequent site visits
- Data is secure and backed up off site

⊕ **YSI.com/Storm-Central**

GOES Transmitter
(H-2221-V2)

Designed specifically for transmitting sensor readings over the GOES satellite system, the Certified GOES Transmitter is capable of linking to any XL Series or Storm 3 data logger. The compact system contains a built-in GPS receiver and allows adjustable transmit power to attain high data accuracy.

- Approved for self-timed and random transmissions in Binary, ASCII or Pseudo-binary data formats.
- Operation is based on version 2.0 of the DCPRS certification standard

⊕ **YSI.com/Goes**

DATA COLLECTION

Storm 3

Designed with Wi-Fi connection, the Storm 3 data Logger allows easy configuration and data collection using the browser-based graphical user interface (GUI), with all standard web browsers on PCs, Tablets, and smart phones.

- Real-time data collection
- Library-based sensor setup options

⊕ **YSI.com/Storm3**

Xylem |ˈzīləm|

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 advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. 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 with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com

For more than 20 years we've been demonstrating how defensible data can change your world. From autonomous HydroMet monitoring systems to hardware installation, design, and maintenance - we have solutions to fit every scale and budget.

Let's Solve Water

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YSI.com/Systems