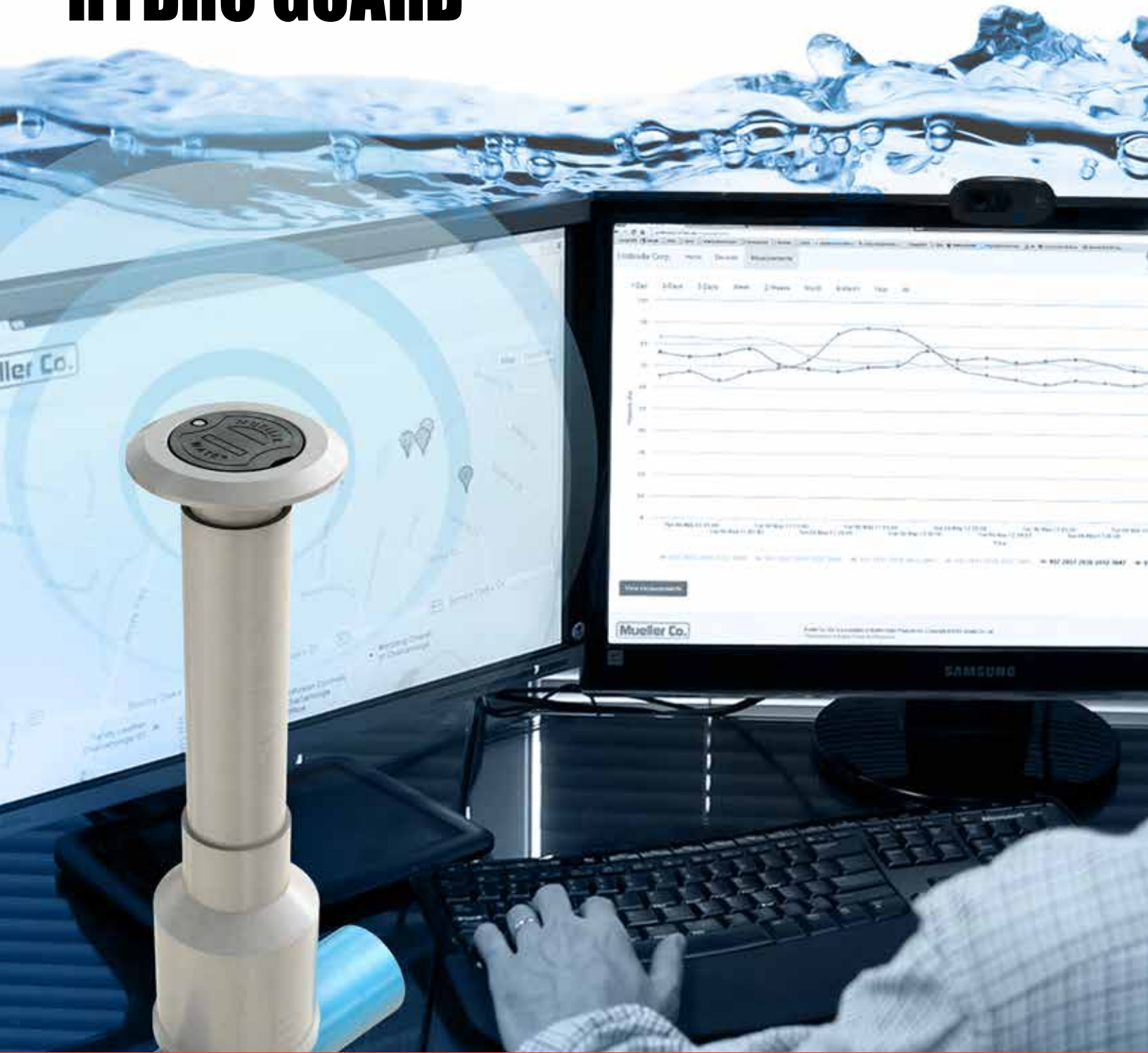# HYDRO-GUARD™

Remote Pressure Monitoring System*

Reduce water main breaks and customer complaints

*Patent pending

Mueller Co.

Reliable Connections™

Hydro-Guard™ Remote Pressure Monitoring System
Intelligent Water Technology™

About The System

Introduced in 2014, the Hydro-Guard™ Pressure Monitoring System has captured the interest of many managers of water distribution, water treatment plants, water quality, and engineering. Now, these professionals can rest assured their pressure conditions are what they expect and, if not, they will be alerted of the condition change within minutes. Often installed in District Metering Areas, Pressure Zones, water tanks, system interconnects, air release valves, or pressure reducing valve stations, the Hydro-Guard Pressure Monitoring System provides near-time data used to enhance hydraulic models and decision-making by replacing dated information with dynamic data. The pressure sensor reports at user-defined intervals via cellular service and a Mueller-hosted secure web server.

Why Monitor Pressure in the Distribution System?

Active pressure monitoring and management in the distribution system is fundamental to providing safe drinking water. The loss of pressure can allow ground water to contaminate the distribution system. Fluctuations in pressure can affect the physical integrity of pipes. Surges in pressure have been known to create additional leaks, main breaks and/or dramatically reduce infrastructure life. Active pressure monitoring and management can also dynamically improve the accuracy of hydraulic models. Additionally, accurate pressure data allows system operators to reduce leakage volumes, energy costs, system maintenance costs, customer complaints, and water quality problems.

- Reduce unaccounted for (non-revenue) water (NRW)
- Identify potential infrastructure failures related to pressure fluctuations which can lead to significant repair costs.
- Improve pump management and reduce energy costs
- Improve public safety

❶ Remote Telemetry Unit (RTU)

The American Association of State Highway Transportation Officials (AASHTO) H20-rated RTU houses the circuit board and antenna. This component features a replaceable battery. *An optional lock is available.*

❷ Adjustable Top

12-inch (300mm) ductile iron top section inserted inside of the composite valve box section for field adjustability.

❸ Composite Valve Box

The Mueller valve box is light weight and manufactured from a durable composite polymeric material allowing for easy field adjustment with ordinary tools.

❹ Sensor Transducer

Captures and transmits data from the installation point to the RTU via the standard 9.8-foot (3 meter) cable. Standard pressure transducer is rated at 250 psi with a 300 psi option available.

❺ Corporation Valve

The Mueller 300 psi-rated low lead ball valve is manufactured in compliance with the AWWA C-800 and complies with the federal Safe Water Drinking Act.

❻ Service Saddle

The Mueller double strap service saddle provides years of trouble-free service.

❼ Installation Flexibility

The Remote Pressure Monitoring System has the ability to be installed directly into the distribution main, or in vault-type applications.

Firmware:

The latest firmware update released by Mueller Co. for the Hydro-Guard Pressure Monitoring System enables users to receive automated data logs from each field unit on a specific account at a frequency of one to twenty four uploads per day. This can be accomplished without needing to log into the customer portal, furthering the product's ability to reduce operational costs and increase productivity while improving distribution line monitoring and maintenance.

Additionally, the latest firmware update allows for more granular data trend mapping and logging. Now users can view graphical trends for minimum, maximum and average pressure readings for every hour, when operating the device in a steady-state pressure monitoring mode.

How It Works

Hydro-Guard™ Remote Pressure Monitoring System is engineered to be deployed anywhere in a distribution system. It can be installed by way of a saddle or direct tap into the distribution main or at the meter vault. The system includes a lithium battery and 1-year of cellular service with a renewable annual contract.

Rapid Installation

Installing the Remote Pressure Monitoring System requires a minimal amount of advanced planning. Prior to the installation, strategic installation points should be identified. These installation points will determine the type of cellular service and if the device will require a valve box. Once the pressure sensor has been securely connected to the corporation valve and the sensor wire to the RTU, the device location will automatically register and operate. The device will reveal system pressures with no additional inputs and is ready for operation and system monitoring.

Automatic GPS location can be affected by location of the device. If unit is unable to establish GPS communication due to buildings, geographic features, or other obstructions then the location of the unit may be entered manually so that it displays properly on the map. See instructions on manual map location setup.

Remote Monitoring Operation

During deployment, a Mueller representative will send an invitation email to the designated customer administrator with sign-in instructions. Once logged into the secure web page, the customer can immediately begin viewing data from all pressure sensor devices that have been deployed. To view details for a specific pressure sensor location, click on the map icon to display the data associated with that sensor. The "Device" screen contains device specific data including location, alarm settings, and login intervals. The "Measurements" screen allows the user the option to browse data over various time frames. Selecting "6 Month" displays data collected in the past 6 months, giving an operational curve of pressure over time.

System Integration and Support

This system transmits the captured data via cellular communication to a smart phone, desktop, or SCADA System. High and low pressure alerts are able to be sent to these devices. Technical support is available after system installation by calling 844.263.5395 during business hours.

Hydro-Guard™ Remote Pressure Monitoring System
Your source for accurate, reliable data
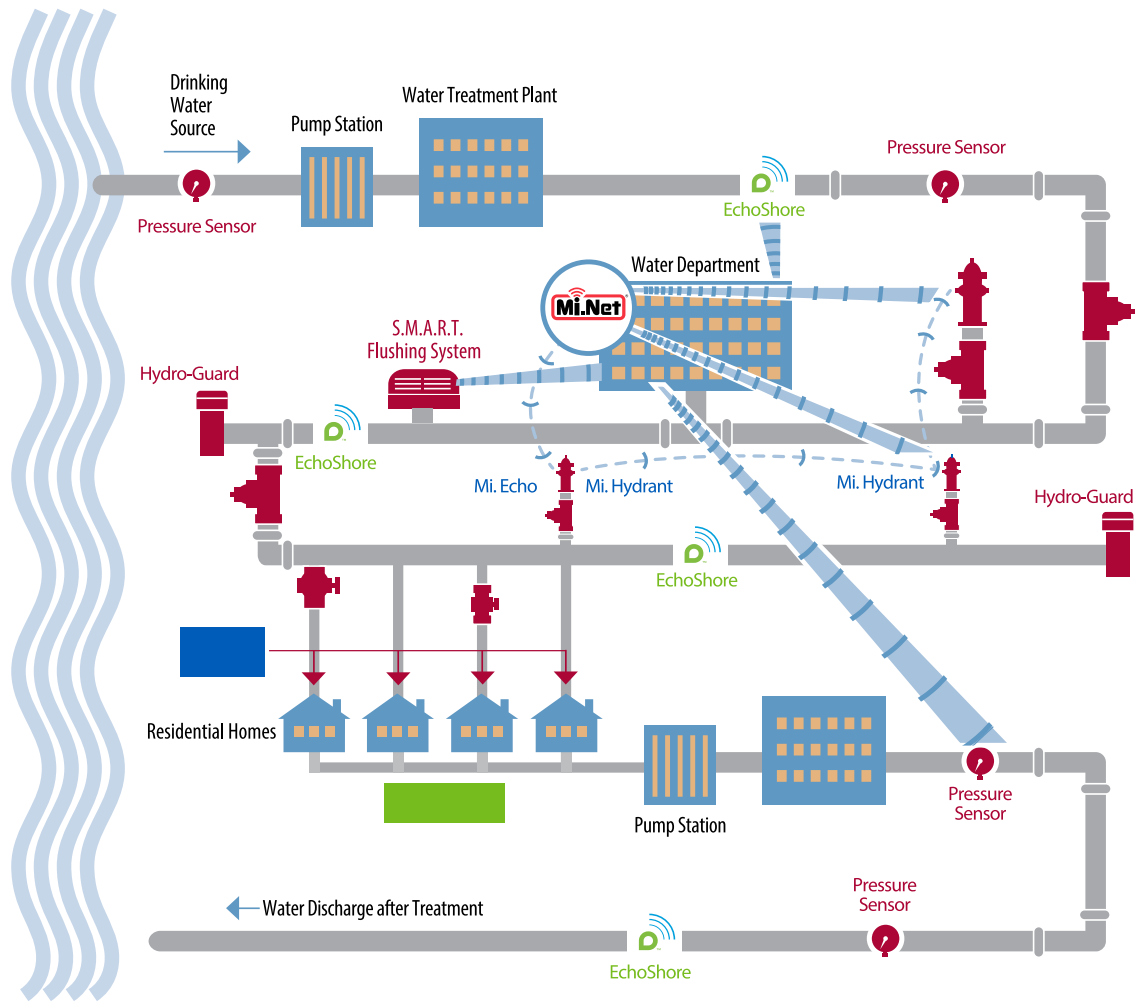
Features & Benefits

Process	Features	Benefits
Aquisition	Available through the largest waterworks distributor and field sales networks in US	Work with people and organizations that you trust and have depended on for decades
	Product, system and monthly cellular service provided by Mueller Co.	Single purchase order
Installation	Can be installed directly in water main autonomously (i.e. in a new valve box using an approved service saddle and corp valve) or into an existing valve box and ¾" NPT port	Pressure can be monitored anywhere along the pipe distribution network
	Easy-to-follow user operation and installation manual	Simple installation and immediate activation
Operation	Customer configurable alerts for low and high pressure conditions	System adapts to the unique needs of each utility
	Multi-security level settings and use	Allows utility administrator to alert various personnel depending on pressure conditions and responsibilities
	Alerts are transmitted via SMS and/or email	Immediate messaging tailored to personnel preferences
	Data transmitted via most reliable machine-to-machine cellular service	No need to deploy personnel to read devices; data is transmitted up to 1/1,000 seconds per sample
	Encrypted website	Data is safe and secure and is only visible to one client
	ESRI map interface via any web browser	User-friendly and intuitive
	RTU withstands vibration and AASHTO H20 traffic loading	Components are durable and long-lasting
	Measures pressures from 0 to 200 psig and operating in temperatures of -30°F to 150°F	Can operate in a wide variety of climates and flow conditions
	Up to 5 years of battery life	Battery pack can be field replaced
Support	Toll-free number 844.263.5395	Immediate access to set up or troubleshoot system

Ordering Guide

Below is a simplified ordering guide to help select the options available. Please contact your Mueller sales representative for additional details and assistance.

METER VAULT INSTALLATION		VALVE BOX INSTALLATION	
Selection	Code	Selection	Code
Meter Vault Installation	IWT 1	Valve Box Installation	IWT 2
Cellular Service: (1st Year Included) GSM (AT&T) CDMA (Verizon)	□ G □ C	Cellular Service: (1st Year Included) GSM (AT&T) CDMA (Verizon)	□ G □ C
Corporation Stop: No Corporation Stop required	NC	Corporation Stop: Mueller 300 Ball Corp, ¾"	45
Saddle: No saddle required	NOSADDLE	Mueller Saddle**: BR2B, BR2S or BR2W	Determine type and size of main
Valve Box: No valve box required	NOV	Mueller Composite Valve Box with Cast Upper Section: 3', 5', 7' or 9' boxes	Select depth of box
Mueller Lockable Lid: No lock Lock required	□ NL □ LR	Mueller Lockable Lid: No lock Lock required	□ NL □ LR

**If the pressure may exceed 200 psi; a ductile iron saddle should be used.*

Drinking Water Source
Pump Station
Water Treatment Plant
Pressure Sensor
EchoShore
Pressure Sensor
Water Department
Mi.Net
S.M.A.R.T. Flushing System
Hydro-Guard
EchoShore
Mi. Echo
Mi. Hydrant
Mi. Hydrant
Hydro-Guard
EchoShore
Residential Homes
Pressure Sensor
Pump Station
Water Discharge after Treatment
Pressure Sensor
EchoShore

● Mueller Co. ● Mueller Systems ● Echologics

This diagram is for illustrative purposes only

For more information visit www.intelligentwatertechnology.com

What is Intelligent Water Technology™?

Intelligent Water Technology is much more than remote pressure monitoring. Intelligent Water Technology is our full line of innovative solutions, products and services that actively diagnose, monitor and control the delivery of safe, clean drinking water to consumers and businesses while ensuring water utilities optimize their investments. It's about delivering information for smart decisions concerning your water infrastructure now and into the next century. It's providing data that helps operators reduces non-revenue water and optimize infrastructure investments from main to meter.

Intelligent Water Technology is automated flushing systems and water quality sample stations. The Hydro-Guard® S.M.A.R.T. system monitors water quality in distribution piping and automatically initiate flushing as necessary to maintain disinfectant residuals as required by the U.S. Environmental Protection Agency. This system conserves water, reduces chlorine consumption, and improves customer satisfaction by helping avoid taste and odor, while requiring minimal supervision by utility personnel. Intelligent Water Technology is residential, fire line and commercial meters,

Mueller SYSTEMS® AMR / AMI systems, remote disconnect metering (RDM), and related products from Mueller Systems. It's Mi.Echo®, Mi.Hydrant™, and Mi.Net® technology. It's our ability to provide utilities with the infrastructure technology needed to optimize operations and ensure the sustainability of our water resources. By building on our expertise in water management, we help water, electric, and gas utilities better manage their operations and energy resources.

echologics Intelligent Water Technology is our ability to accurately detect leaks and assesses the structural condition of water pipes without breaking ground or disrupting service. It's EchoShore™ and ePulse® technology. It's the Echologics team who measure how quickly acoustic signals are transmitted along a section of pipe to help water utilities decide where and when to repair and/or replace their aging water infrastructure.

Our Products

Mueller Co. has built its reputation on producing innovative water distribution products of superior quality – a reputation that is literally "on the line" every day throughout the world. Mueller Co. products and those of its affiliates are used throughout the water system…from the source to the consumer. And we are committed to continuing research and development of new products and services to meet the growing needs of the water infrastructure industry. Mueller Co. is the largest and only full-line supplier of potable water distribution products in North America and its markets continue to expand globally.

Our People

The capacity to deliver the widest array of products and stand behind those products to ensure your satisfaction is our strength. The success of Mueller Co. is dependent upon the success of those who are involved, both inside and outside our company. Therefore, we feel our future is wholly dependent on long-term relationships with our employees, customers and suppliers. This is why we strive to be proactive and responsive to their needs, always looking for a "better way". It's an approach that has set us apart since 1857 and will assure our mutual achievement and prosperity in the future.

For more information about Mueller Co. or to view Mueller Co.'s full line of water products, please visit www.muellercompany.com or call Mueller Co. Customer Service at 1.800.423.1323.

Follow Us:

Other Innovative Mueller Products

Hydro-Guard® S.M.A.R.T.™ Flushing System

The Hydro-Guard S.M.A.R.T. Flushing System is the ultimate automated flush management system. S.M.A.R.T. enabled flushing can be set to occur both on a time-based schedule or in response to water quality thresholds. What's more, it allows two-way communication and unit management via secure web portal or interface with the end-user's existing SCADA system. By way of this two-way communication, the utility can receive real-time updates from each Hydro-Guard unit installed in the distribution system equipped with the S.M.A.R.T. controller. Now the end-user can have maximum control over the utility's flushing program whether on-site or at a remote monitoring location.

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