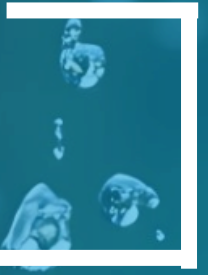




# HWM Global

A Halma company



# Clean Water Solutions

**PRODUCT BROCHURE**


# About HWM Global

Since 1979, our people and products have delivered innovative, data driven solutions for monitoring clean water, wastewater, and energy infrastructure designed and manufactured for performance and accuracy. Leveraging extensive experience and technical expertise, HWM Global has earned recognition as an industry leader, renowned for its commitment to advanced technology, innovation, quality, and service excellence. As a wholly owned subsidiary of Halma PLC, we're proud to be part of a global network of life-saving technology companies, all dedicated to growing a safer, cleaner, and healthier future for everyone, every day.

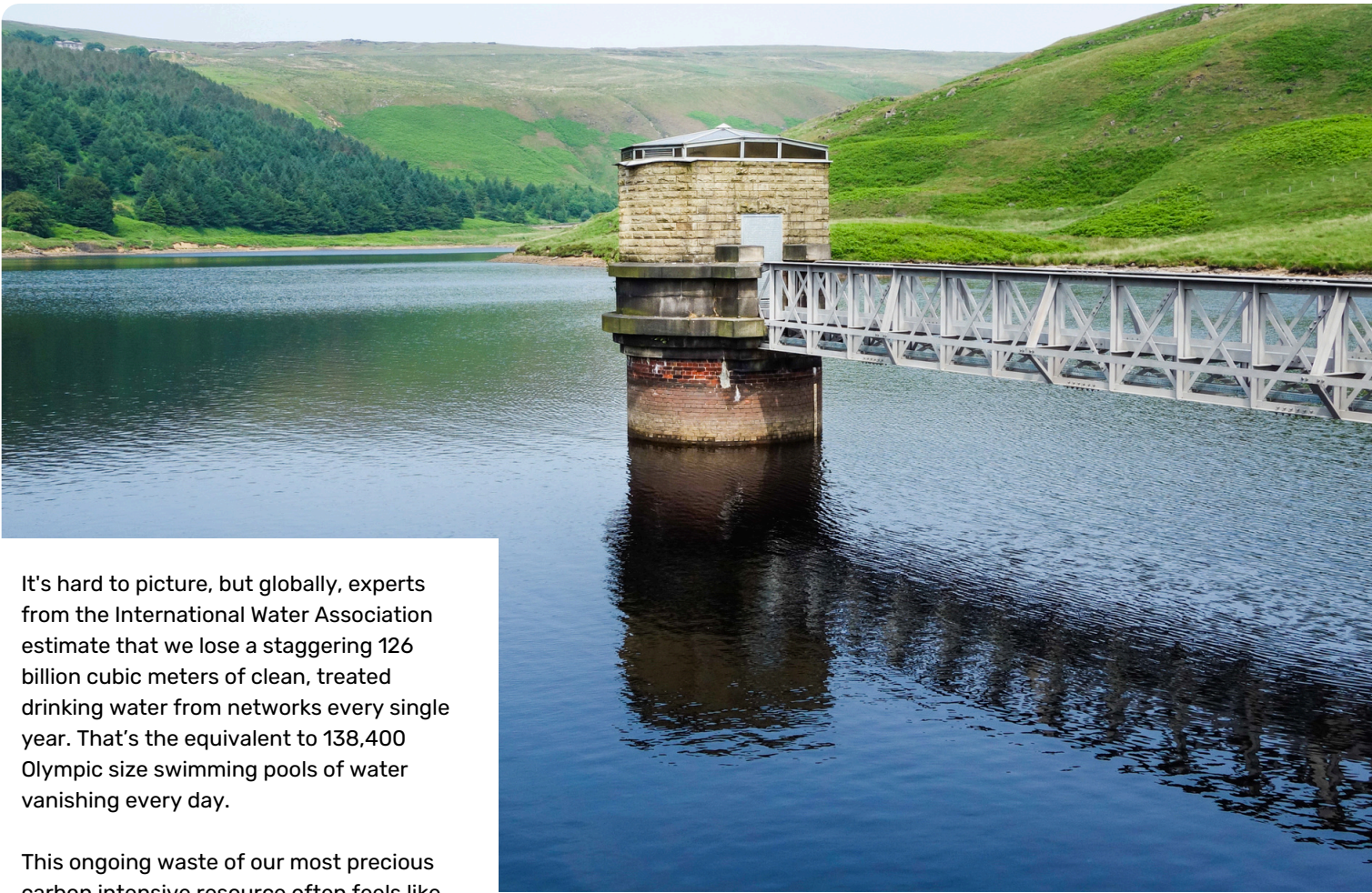
Whether you'd like to learn more about our full line of products or discuss the right products for the unique challenges on your network, our specialists are here to help with in-depth industry knowledge and technical expertise.

 [hwmglobal.com](https://www.hwmglobal.com)

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It's hard to picture, but globally, experts from the International Water Association estimate that we lose a staggering 126 billion cubic meters of clean, treated drinking water from networks every single year. That's the equivalent to 138,400 Olympic size swimming pools of water vanishing every day.

This ongoing waste of our most precious carbon intensive resource often feels like we're fighting a losing battle, especially when we know that this isn't from dramatic bursts, but approximately half of total leakage coming from the accumulation of small, hidden 'background' leaks, quietly draining resources.

Our clean water solutions including leak detection, network monitoring and pressure management are all industry leading methods to safeguard our world's most critical resources.



# The Journey to Reduce Non-Revenue Water Loss

## 1. Network Monitoring

Continually Monitor Flow & Pressure in a Specific DMA to highlight unaccounted for water/leakage with advanced data loggers. Our powerful data logging solutions deliver near real-time data recordings of problem areas in the network, including transient monitoring.

## 2. Acoustic Monitoring

Identify leak area with our award-winning permanent acoustic monitoring solutions. Acoustic telemetry loggers continually monitor the network from trunk mains to plastic pipes, listening for leaks that are hard to identify.



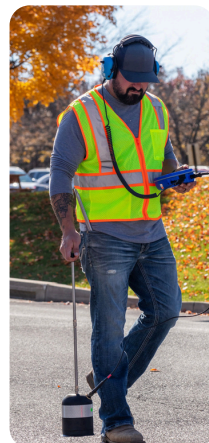
## 3. Locate the Leak

Highlight the point of interest using our advanced leak noise correlators. Automatic Intelligence Filtering Systems work with both live and pre-recorded correlation data to effectively build an 'expert user' into the units.



## 4. Pinpoint Leak

Pinpoint the location of the leak for excavation & repair using digital ground microphones. Our ground microphones deliver the highest quality sound incorporating auto filtering, frequency display, and sound file capture.



## 5. Pressure Management

Effective pressure management lowers the strain on our network by reducing pressure spikes and preventing bursts. We regulate this via our remote pressure controllers.



## Leak Detection Solutions

### Our Wide Range of Advanced Leak Detection Solutions Include:

- Advanced Leak Noise Correlators
- Permanent Acoustic Loggers with Correlation Features
- Digital Ground Microphones
- Accelerometers & Hydrophones



## Data Logging Solutions

### Our Powerful, Fast Data Logging Solutions Include:

- Pressure & Flow Data Logging
- Level Monitoring
- Acoustic Logging with Correlation
- Flow Identification for Background Leakage



## Pressure Management Solutions

### Our Two-Way Remote Pressure Reducing Controllers Include:

- Pegasus 2 Full Modulation, Including Closed Loop Optimisation & Latching.
- Sentinel 2 Pressure Reducing Valve (2 stage modulation)



## General Specifications

- DataGate Web-based Software
- 4G NB-IoT/LTE-M with 2G Fallback - Over 300,000 Devices Permanently Installed in the UK.
- Instant Alarms
- 5 Year Battery Life
- IP68 Rating



# Network Monitoring

## Understand Your Network by Monitoring Flow & Pressure

### Data Logging Products

Data Loggers continually monitor the flow and/or pressure in a specific DMA to monitor and measure non-revenue water/leakage. Our powerful, fast data logging solutions deliver effective, near real-time data recordings to identify problem areas in the network.

DataView is our digital platform for viewing and analysing data retrieved from our data loggers with enhanced features such as measuring 'night line' changes, alarm management, and establishing true maximum and minimum flow through pseudo logging.



#### MultiLog LX2

MultiLog LX2 is a versatile, battery powered, telemetry data logger that is compatible with a diverse range of sensors and meters.

With the integration of LTE-M and NB-Iot, MultiLog LX2 delivers effective data recording and transmission.

#### MultiLog 2

MultiLog 2 is an advanced multi-channel data logger designed to monitor any combination of digital and analogue signals.

MultiLog 2 is ideal for a variety of specialised applications, including monitoring PRV flow and pressure.

#### COMlog 2

COMlog 2 is a highly versatile data logger designed to be a cost-effective solution for various data logging applications.

A tool primarily designed for AMR monitoring, COMlog 2 is compatible with any sensor or meter that has a volt-free, pulsed output.



### LoLog Vista

LoLog Vista is a simple and highly adaptable data logger, designed with a convenient display screen for portable use. It can be applied to most data logging applications in just minutes.

LoLog Vista operates unattended until a user collects the data.



### Pressure Transient

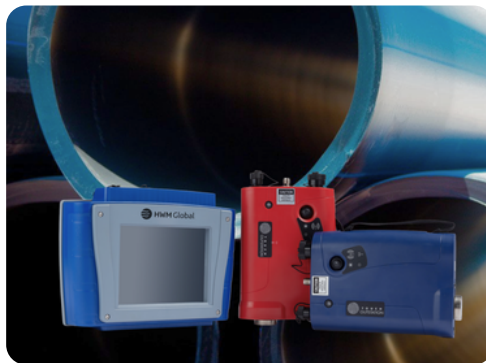
Featuring an innovative 'Event Window Selection' and our advanced modem, Pressure Transient is designed for effective network transient logging.

Logging at up to 100 times a second, Pressure Transient is ideal for monitoring transient changes.

# Acoustic Leak Detection For Smart Water Management



Continually listen out for leaks, accurately identifying leak areas across your network with our advanced **Acoustic Telemetry Loggers**.



Locate the leak by determining the 'Point of Interest' even in the most difficult leak detection situations using our advanced **Leak Noise Correlators**.



Accurately pinpoint the leak across various pipeline materials for excavation and repair using our **Digital Ground Microphones**.

# Acoustic Monitoring

## PermaNet SU

### Acoustic Logging with Advanced Correlation

PermaNet SU is an IoT-based acoustic leak detection system that combines a leak noise sensor with versatile telemetry technology into a robust single unit for installation across a range of environments.

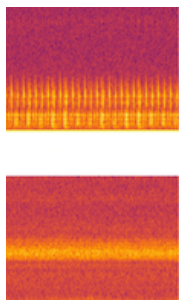
Designed for long-term fixed deployment, PermaNet SU streamlines operations with instant leak notifications to help reduce leak run times, prevent pipe bursts, minimise supply interruptions and reduce overall leakage levels.

PermaNET SU records sound files on every leak alarm and adds GIS data enabling correlation for further accuracy of leak pinpointing.



### Machine Learning Algorithms Enhance Acoustic Logger Performance to Reduce Leakage

DataGate transforms raw acoustic data from our PermaNet SU acoustic loggers into visual spectrograms using our advanced machine learning model that build's on the industry's largest global leak dataset.



ML algorithms enhance acoustic logger performance by intelligently identifying and filtering out non-leak sounds (categorising them for example as pump noise, PRV, or electrical interference), reducing false positives and increasing field performance & confidence in locating leaks correct, first time, reducing leak run rate times.

This provides water utilities with the insights needed to lower non-revenue water loss, prioritise repairs, and safeguard critical infrastructure.





## PermaNet+

PermaNet+ combines a high-performance leak noise sensor and our ComLog 2 data logger to become a large-scale fixed network leak detection solution built to suit a variety of operational needs.

Battery powered and suitable for long-term deployment, PermaNet+ instantly triggers an alarm when a leak is detected, delivering high-quality acoustic recordings for fixed, remote correlation, designed to facilitate informed decision making.



# Coming Soon: SoundSens

## Experience the Future of Leak Detection

SoundSens is our latest innovation in design & technology and a groundbreaking leap into our new **'MicroStream' Leak Detection Solutions** range - A new and evolving, highly sustainable portfolio of **Next Generation** products advancing leak detection.

SoundSens has been engineered to significantly **reduce real loss** and associated **leakage emissions**. It delivers advanced **accuracy, speed,** and **operational efficiency**, even in the most challenging environments, providing a more targeted, **resource-efficient,** and **lower-carbon approach** to network management.

SoundSens small, unobtrusive, multiple pod design means that it has an enhanced ability to further **pinpoint hidden leaks** detected by our 'in-situ' product portfolio. SoundSens' **high-performance sensors** work together as **multi-point correlators** to pick-up those quieter leaks that prior methods could miss.

## MicroStream

### Leak Detection Solutions

Our MicroStream App connects in-ground leak detection hardware to software in the cloud, providing accessible, easy to understand data and actionable near real-time data insights.



# Acoustic Monitoring



## Trunk Main Monitoring

### PermaNet TM GPS

Due to the scale of clean water trunk mains, our PermaNet TM GPS solution combines the sensitivity of our Hydrophone 2 with our advanced telemetry data logger MultiLog LX2. The Hydrophone delivers unrivalled leak detection performance due to the way it detects sounds that travel through water.

This innovative solution of connecting the Hydrophone 2 to the MultiLog LX2 delivers GPS Time Synchronisation, increasing accurate leak noise detection and correlation over a greater distance on large diameter pipes. With the ability to combine pressure monitoring on the network simultaneously through the same logger, this provides an additional and powerful solution to trunk main monitoring.



# Locating the Leak

## Advanced Leak Noise Correlators

Once the problem areas in the network have been highlighted, advanced leak noise correlators locate the leak and determine a point of interest. Designed for precise leak detection in water distribution systems, Touch Pro is a high-performance leak noise correlator featuring automated filtering, long-range radio transmission, and a rugged design for fast, accurate leak detection in the field.

### Touch Pro

Touch Pro is a hand-held, ergonomic device that acts as a base station for two LNS outstations that can be heard in near real-time. Touch Pro features a bright, full-colour touchscreen and intuitive step-by-step interface, simplifying the correlation process for both new and experienced users.

Touch Pro utilises proprietary Automated Filtering Intelligence System to run over 50 filter combinations automatically, eliminating manual adjustments and maximising correlation accuracy to pinpoint leaks within 1 meter in near real-time or while working with pre-recorded data.



### Touch Pro TM

Touch Pro TM represents a breakthrough in trunk main leak detection technology with our Hydrophone 2 leak noise sensors enhancing Touch Pro's sound amplification, providing advanced levels of sensitivity across the widest frequency range. This makes Touch Pro TM an effective leak noise correlating solution for plastic and large diameter pipelines.

# Pinpoint the Leak

## Digital Ground Microphones

Once advanced correlators have highlighted the point of interest, our digital ground microphones are used to confirm and accurately pinpoint the location of the leak for excavation. This equipment can also be used to do a sweep of the area listening for leaks.

### DXmic Pro

DXmic Pro is a digital ground microphone with advanced audio clarity, wireless connectivity, and smart filtering for quick, accurate leak pinpointing across various pipeline materials.

DXmic Pro combines exceptional sound clarity, an intuitive touchscreen interface, and smart filtering technology to accurately pinpoint leaks. DXmic Pro features various filter options designed to reduce interference and eliminate unwanted frequencies, with pre-set configurations optimised for both metallic and plastic pipes. It also includes the advanced ability to save sound files to the mobile app to share data immediately direct from site.



### Lmic

Lmic combines the practicality of a low-cost electronic listening stick with the performance of a ground microphone, making it the ideal tool for general leak-sounding operations. Designed for flexibility, it can be fitted with either a tripod foot (for use as a ground microphone) or probe rods (for sounding at fittings).

# Pressure Management

## Invisible Impact, Immediate Results

### Pegasus 2

An advanced pressure control system with cellular connectivity that enables remote, time- and flow-based modulation and real-time pressure optimisation to reduce leakage, minimise bursts, and extend asset life.

With built-in secondary or transient logging down to 25Hz, multi-point time-based PRV control, and a unique latching facility for extreme high demand sites, Pegasus 2 gives water utilities the data visibility and automated control needed to extend asset life and improve service continuity - making it a future-ready solution for smarter pressure management.



### Sentinel 2

Sentinel 2 is an intelligent, two-point PRV controller designed to optimise and manage water network pressure based on time or flow & high/low pressure. With advanced LTE-M/NB-IoT connectivity, near real-time data logging, and remote management, Sentinel 2 helps utilities reduce leaks, minimise pipe bursts, and improve network efficiency - all within a rugged, IP68 design built for long-term field performance.

# DataGate Platform

## Turning Data into Actionable Intelligence

All captured data is seamlessly delivered to our DataGate web-based platform where it is aggregated, analysed, and visualised. DataGate is our online data server that provides a comprehensive platform for remote management of all your data needs, from near real-time monitoring to historical analysis. With DataGate, you have a powerful tool at your fingertips that empowers users to make informed decisions quickly.

**74M** Data Points      **4.6M** Messages      **650K** API Requests

DataGate processes more daily transactions than the entire UK CHAPS Banking system handles in a month. That means, on average, we're operating at a scale that rivals the daily volume of UK credit and debit card activity.





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**Innovations that keep  
critical resources flowing.**



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