



Hydroguard[®]

Water Pipeline Integrity Management



- Predictive mains burst system
- Flow, pressure and noise measurement
- Rugged, waterproof (IP68)
- Long battery life
- Remote data access and alarms

Burst water mains cost more than money

Providing solutions for industry

Innovative design coupled with skilled in-house engineers provide global solutions for applications in level, flow, temperature, pressure and data logging measurement solutions. We work with you, the customer, from the start of each project to find the most cost-effective and reliable solution.

Our niche engineering status brings the benefit of focused solutions and be-spoke applications. Challenging applications need rigorous testing to ensure the high performance and reliability that is the hallmark of our work.



A screenshot of a news article from the Evening Standard. The page features the newspaper's masthead with a logo of a horse and rider. Below the masthead is a navigation bar with links for 'Evening Standard', 'This is London', 'News', 'Business', 'Sport', 'London 2012 Olympics', 'City Hall', 'Columnists', and 'Blogs'. The main headline reads 'Maida Vale, the valley of floods' in a large, bold font. Below the headline is the author's name, 'Katharine Barney, Evening Standard', and the date, '12.11.07'. The article text states: 'Dozens of residents were evacuated and hundreds more left without power after a water pipe burst today. The three-foot man released water with such pressure that the road surface was lifted and thousands of gallons flooded the streets and basements of Maida Vale. Business owners said thousands of pounds of stock had been destroyed and scores of motorists found their cars, stored in a low level car park, had been ruined.' To the right of the text is a photograph showing a flooded street with people wading through the water. Below the main text are several small thumbnail images showing different scenes of flooding.

Every water company's nightmare is the sight and sound of a burst water main: the danger to life and property from flooding.

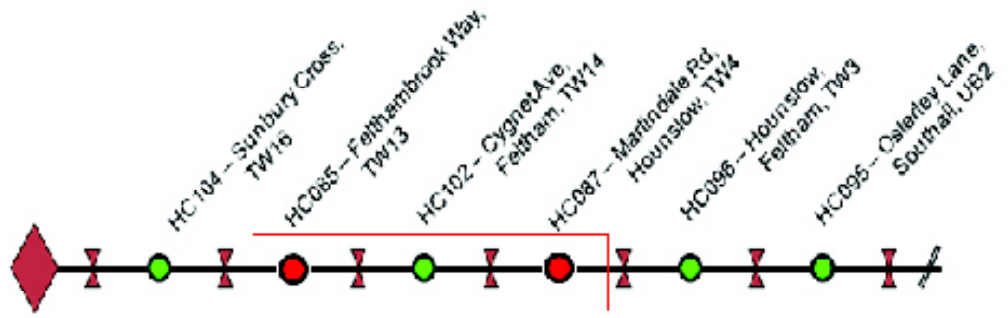
The impact on your company's image, the inconvenience caused to businesses travellers and the public.

Ashridge Engineering Limited selected as a 'partner company' by Thames Water with the specific goal of providing a cost effective, battery operated monitoring and alarm system for the detection of burst water mains.

More recently the scope has been widened to include integration into the LWCC RTAP Scada system.

Hydoguard intelligent technology provides the solution to these aims.

Hydroguard® - The cost effective Solution

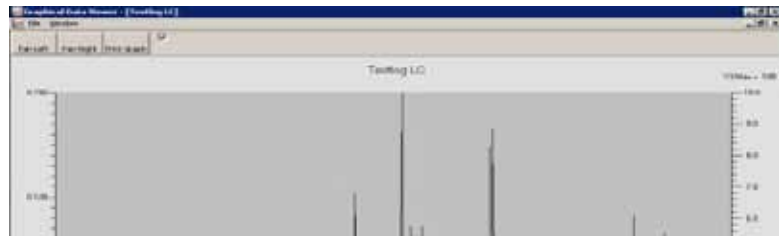


Hydroguard® Benefits

- Cost effective
- Long battery life
- Self contained units
- Ease of installation
- Burst notification
- Remote configuration
- Pipeline security
- Greater efficiency
- Quicker repairs
- Allows fast response times
- Reduce 3rd party damage

Hydroguard® Features

- Advanced 'learn' profile
- 'Fastline' transmission facility
- Multiple alarm modes
- Increased sensitivity
- Integrated into LWCC systems or remotely managed by Ashridge
- Minute by Minute flow readings
- Tri-Parameter
 - Flow
 - Pressure
 - Noise



Hydroguard® is a Tri-Parameter solution provides high integrity monitoring for water trunk and transfer mains.

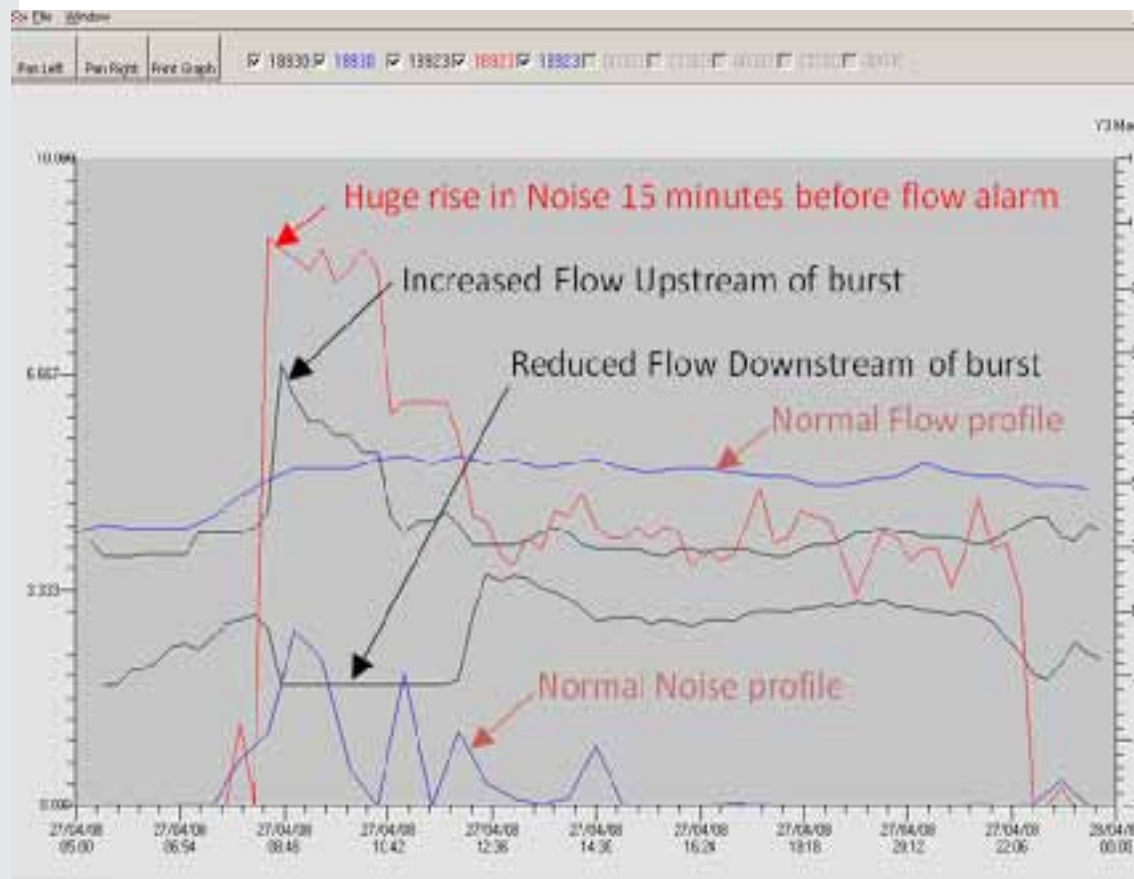
Sophisticated algorithms are used to compress data for transmission by SMS.

Following post analysis of the incoming data further algorithms are used to determine the failed asset and identifying the shutable section.

Verification test facility has been included within this software to allow full testing to be conducted at LWCC.

The use of a robust, highly sensitive noise sensor, with no moving parts, provides a signal with maximum immunity from background noise using sophisticated fast fourier algorithms developed by the Ashridge Engineering team.

The internal hydrophone can be used in situ by 3rd party correlators therefore maximising the use of the sensors.



Preliminary Specification for Hydroguard® III

Hydroguard® Remote Unit

Battery powered with GSM modem.

Flow & Noise Measurement

Using the advanced Ashridge insertion flowmeter with integrated Hydrophone for improved sensitivity

Data Logging

For optimum battery life the unit 'wakes' every 15 minutes and performs Pressure, Noise and Flow measurements.

'Learn' algorithm

The Hydroguard can be set to learn a 'pipeline' activity signature' comprising of flow, pressure and noise profiles.

Fastline

In event of Hydroguard entering alarm conditions the unit can enter 'Fastline' mode and perform a high density of readings to be transmitted to the host PC for immediate analysis.

Alarms

Multiple high or low alarms can be set for each of the 3 channels against absolute values or deviation from the 'learnt' profile. Alarms can trigger alerts to the host PC, text messages and 'Fastline'

Data Transmission

Readings sent to Host PC once per 24 hour period. Alarm notifications and 'Fastlines' are transmitted immediately.

Base Station

At the designated base station the PC will receive the SMS messages and present the data in graphical format for viewing and archiving as well as monitor alarm situations to provide burst location and early warning.

Two-way Communication

Allows reconfiguring of settings within the Hydroguard unit without visiting the site.

In-House Pre-Compliance Capabilities

Electrical Fast Transients (IEC 61000-4-4)
Radiated RF Immunity (IEC 61000-4-3)
Surge Immunity (IEC 61000-4-5)
Conducted Radio Frequency (IEC 61000-4-6)
Insulation Resistance (IEC 255-5)
Dry Heat (IEC 68-2-2)
Damp Heat (IEC 68-2-30)
Vibration (IEC 68-2-6)
Shock (IEC 68-2-27)
Bump (IEC 68-2-29)
Water flow rig

In-House Calibration Capabilities

(referenced to UKAS or National Standards)

Absolute Pressure Dead Weight Tester
AC Volts to 1kV
DC Volts to 1kV
AC Amps to 50 Amps
DC Amps to 50 Amps
DC Insulation to 30kV

AGENT



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Rev: HG-220409
subject to change without notification