Halma Water Management

Halma Water Management

Halma Water Management

Palmer Environmental

The worlds largest supplier of leak detection and pressure control equipment to manage leakage in water networks. Designed the first correlator in 1979 and have pioneered acoustic noise logging and fixed network systems.

Radcom Technologies

Market leader in the design and manufacture of rugged, innovative data logging and telemetry equipment for water and environmental industries. Now introducing innovative Wastewater solutions.

Hydreka

Specialised flow measurement systems for all parts of the water cycle, including open channel systems and environmental monitoring.

Fluid Conservation Systems

Market specialist in the USA for Palmer, Radcom & Hydreka products.

Halma Water Management

Halma Water Management

Palmer environmental

RADCOM TECHNOLOGIES LTD

HYDREKA www.hydreka.fr

FCS Fluid Conservation Systems

HWM

Halma Water Management

Four water conservation experts now working together as one, with one name, one sales force, one global distribution network and one board of directors.

HWM successfully combines the reputation, experience, innovation, knowledge, products and customer service of these four well respected companies into one global solution for the industry.

Water Management Is Our Business

Halma Water Management

Pressure Control Solutions

Leak Detection Solutions

Data Logging & Telemetry Solutions

Flow Measurement Solutions

Automatic Meter Reading Solutions

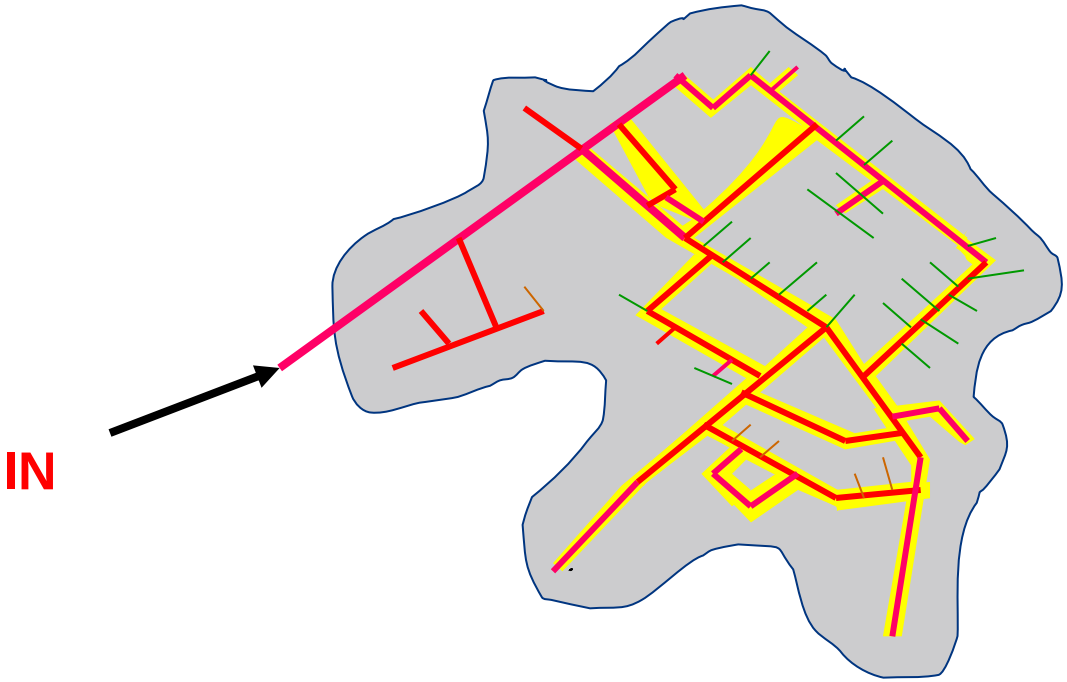
Environmental Monitoring Solutions

A HALMA COMPANY

How Do You Manage Water Effectively?

Halma Water Management

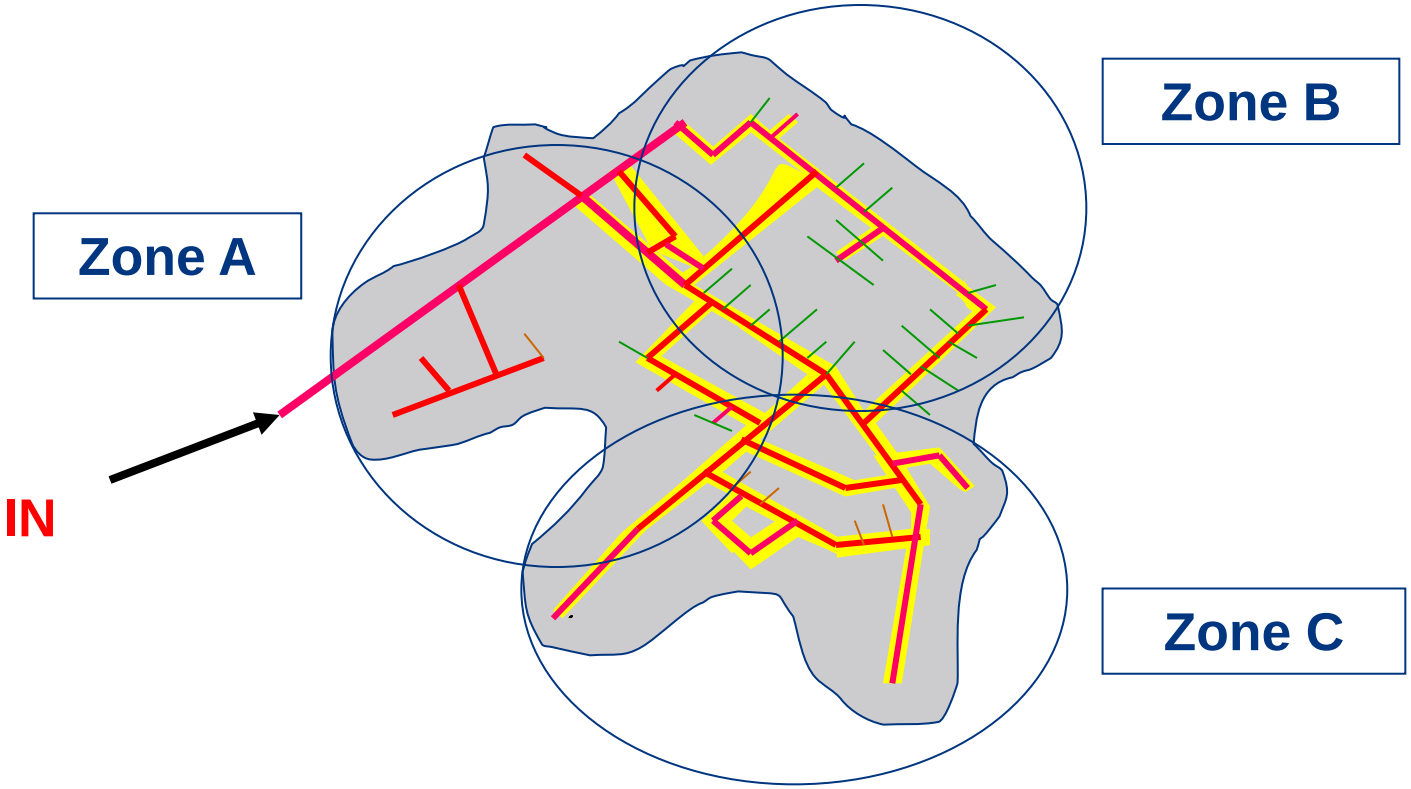
The most effective way to manage water is to divide your network into zones.



How Do You Manage Water Effectively?

Halma Water Management

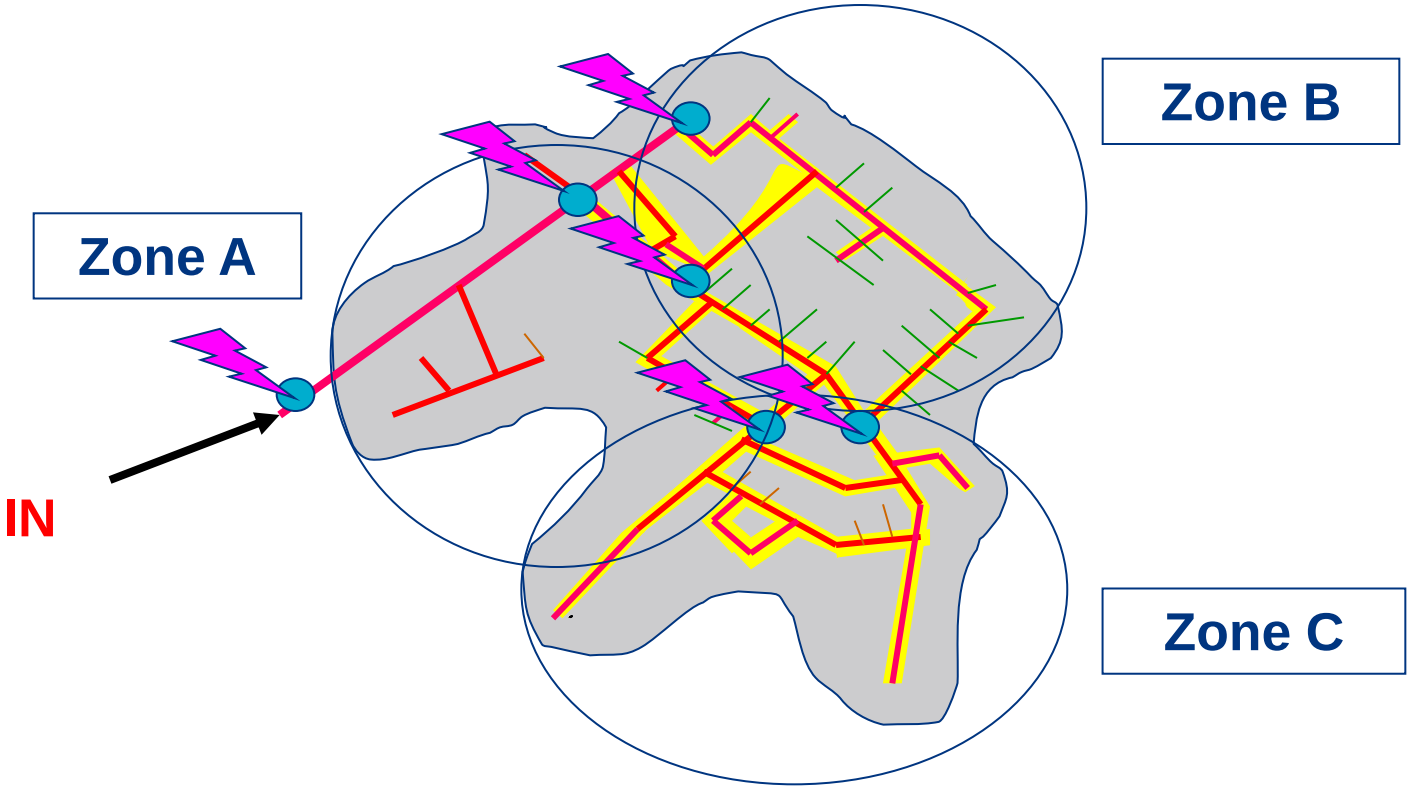
In the UK, each zone typically contains approximately 1,500 properties
These are known as District Metered Areas (or DMA's)



How Do You Manage Water Effectively?

Halma Water Management

Water entering each zone is monitored and logged and the data used to calculate usage within the DMA. Unexpected increases in water can indicate potential leakage.



Halma Water Management

Leak Detection Solutions

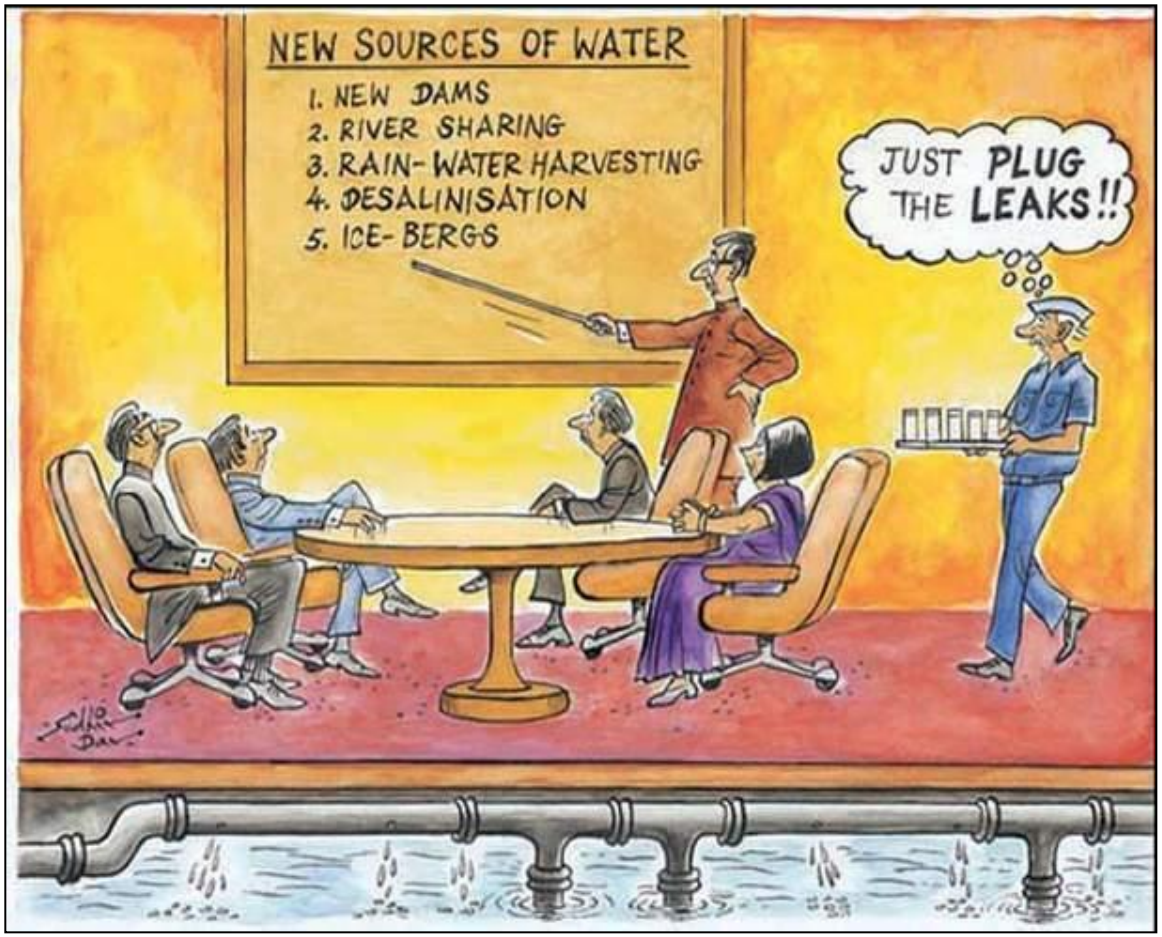
Leak Detection Solutions

Palmer environmental · HYDREKA www.hydreka.fr · RADCOM TECHNOLOGIES LTD · Fcs Fluid Conservation Systems

A HALMA COMPANY

Why Detect Leaks?

Halma Water Management



Cartoon courtesy of the World Bank (Water & Sanitation Sector)

"Throughout the world, water resources continue to be spoiled, wasted and degraded. The consequences for humanity are grave"

Ban Ki Moon
United Nations
Secretary-General
December 2007

HWM Leak Detection Solutions

Halma Water Management

- **Localisation (Option One) - Noise Logging**

  Permalog+, Patroller II, PermaNet

- **Localisation (Option Two) – Step Testing**

  MAST II

- **Leak Location Pinpointing – Correlation**

  MicroCorr7, MicroCorr DX, MicroCALL+, SoundSens i

- **Confirmation - Ground Microphones**

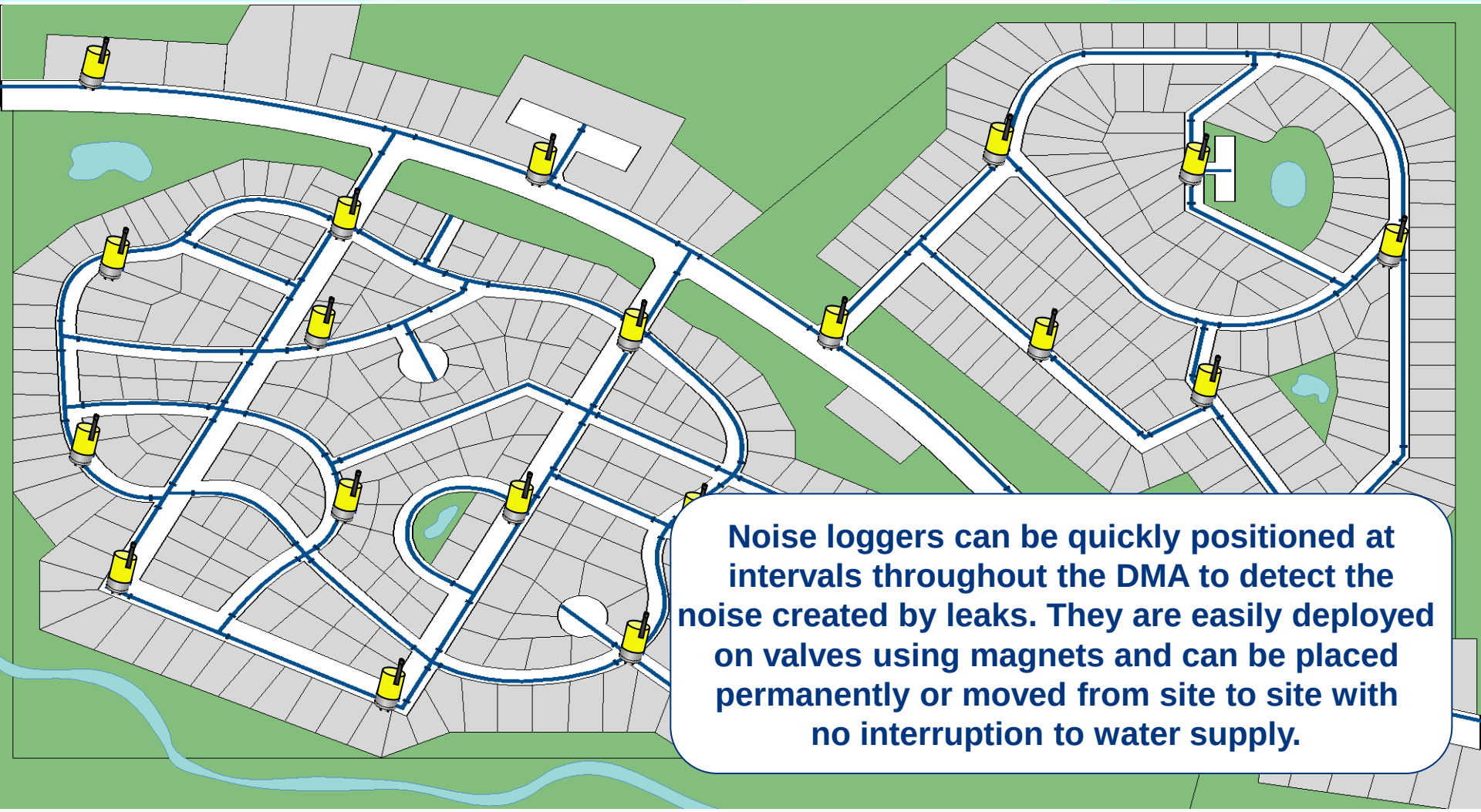
  Lmic, *Xmic, XmicLite*

- **Customer Side Leakage – Meter Pulse Readers**

  Leakfrog, Leak Finder, SMART View

Leak Localisation – Noise Logging

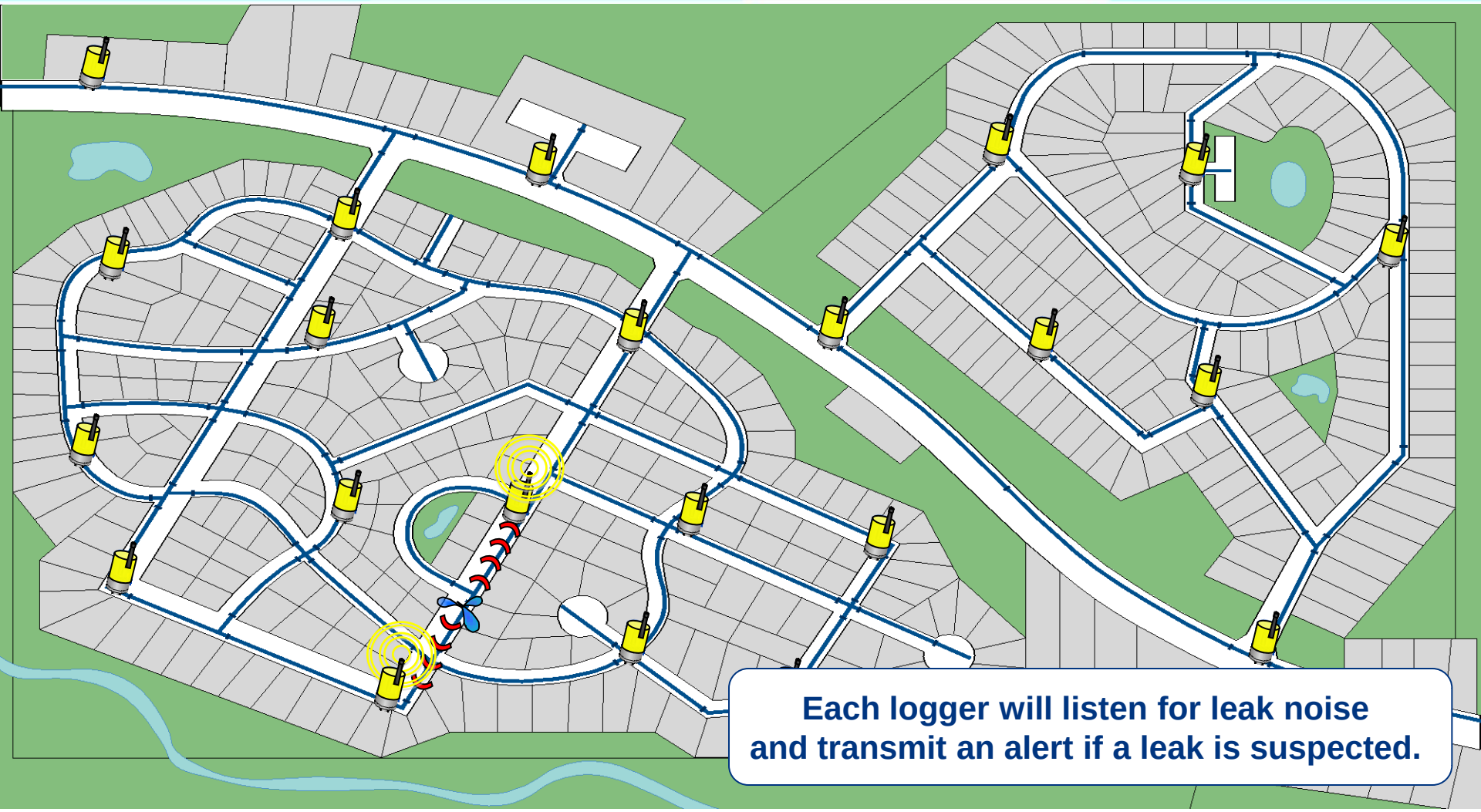
Halma Water Management



Noise loggers can be quickly positioned at intervals throughout the DMA to detect the noise created by leaks. They are easily deployed on valves using magnets and can be placed permanently or moved from site to site with no interruption to water supply.

Leak Localisation – Noise Logging

Halma Water Management



Leak Localisation – Noise Logging

Halma Water Management

Permalog+®

Permalog+ is an intelligent noise logger designed for permanent deployment or tactical deployment to survey large areas of network quickly and effectively

- **Fully automatic intelligent logger**
- **Adaptable to all network situations**
- **Innovative design for rapid deployment**
- **Compact size**
- **Low unit cost**
- **Long battery life (5-7 years)**
- **Patent protected**
- **Aqualog extended logging mode**
- **Flexible Data Collection:**
  - ***"Lift and Shift"***
  - ***"Drive By Mode"***
  - ***"PermaNet via Radio Network"***
  - ***"PermaNet via SMS Repeater"***

Leak Localisation – Noise Logging

Halma Water Management

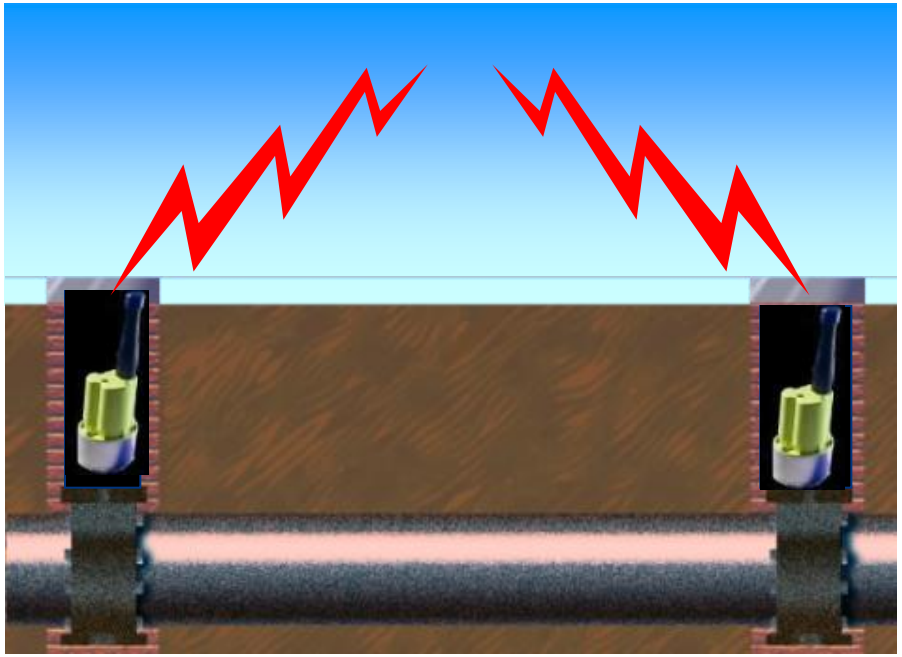
Since the Permalog+ was launched in 2007, over 40,000 units have been deployed successfully throughout the world.

When these figures are combined with sales for older models, there are now over 200,000 Permalogs in circulation worldwide.

Made in Wales

Leak Localisation – Noise Logging

Halma Water Management



Areas using Permalog with drive-by data capture include:
Las Vegas, El Paso, Hong Kong, Thames Provinces, Birmingham, Beijing, Murcia, Almeria & Metz

Patroller II

Drive-by Data Capture

PDA based

Faster drive-by for reduced patrol times

Distance of transmission up to 150m from logger

Leak Localisation – Noise Logging

Halma Water Management

SMS/GPRS Radio Data Logger

SMS/ GPRS Gateway

Global Net

SMS Repeater

Booster receiving on 868MHz, transmitting on 153MHz

Permanet®

As an alternative to drive by data capture, permanently deployed Permalogs can be combined with Network Radio or SMS Repeater to send leak data directly to an office PC or mobile phone via dedicated web hosted or local software packages.

Leak Localisation – Noise Logging

Halma Water Management

Benefits of the PermaNet fixed leak detection network

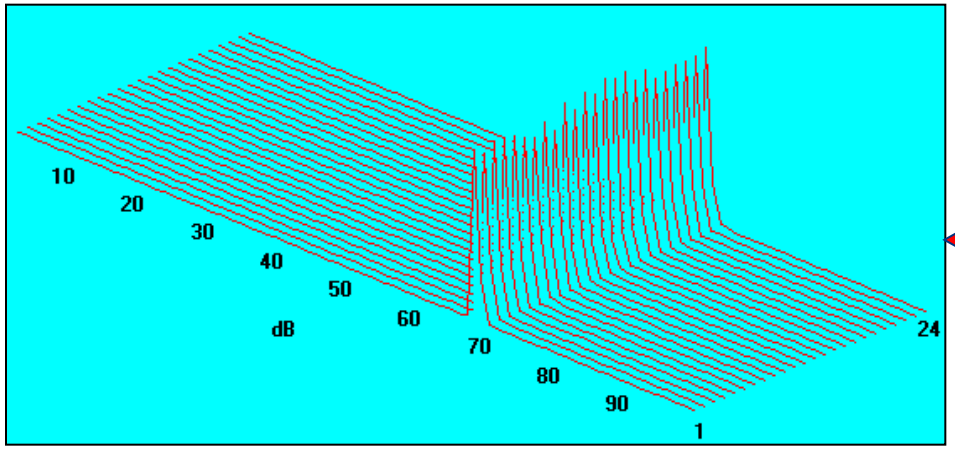
Permanet®

- **Automatic leak alarm**
- **Immediate response**
- **Critical areas under control**

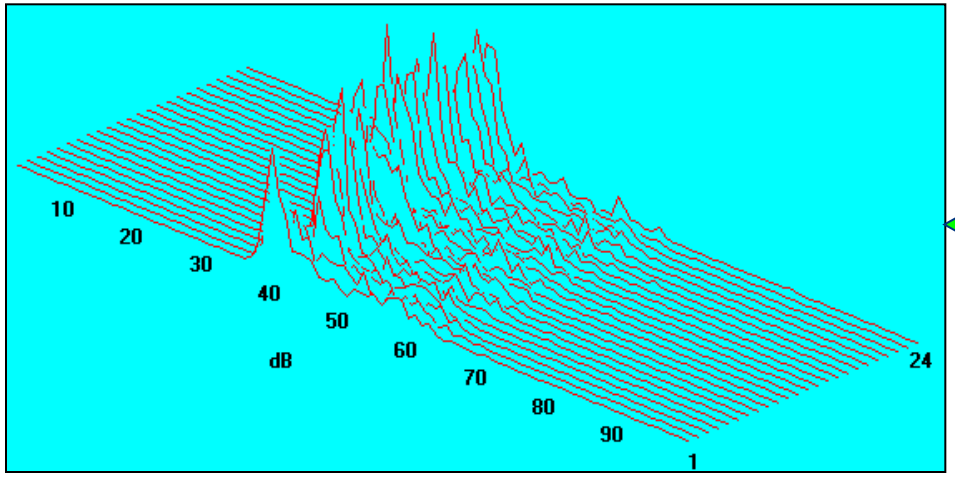
Areas with a PermaNet fixed leak detection network currently include Hong Kong, Birmingham, Inverness, Barnsley, Tonsberg, Cambridge University & Metz

Leak Localisation – Noise Logging

Halma Water Management



Permalog+ unit in "Aqualog" recording mode showing noise level and spread. This profile indicates a leak.



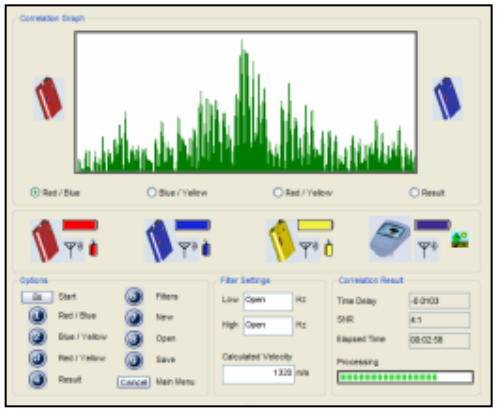
Permalog+ unit in "Aqualog" recording mode showing noise level and spread. This profile indicates no leak.

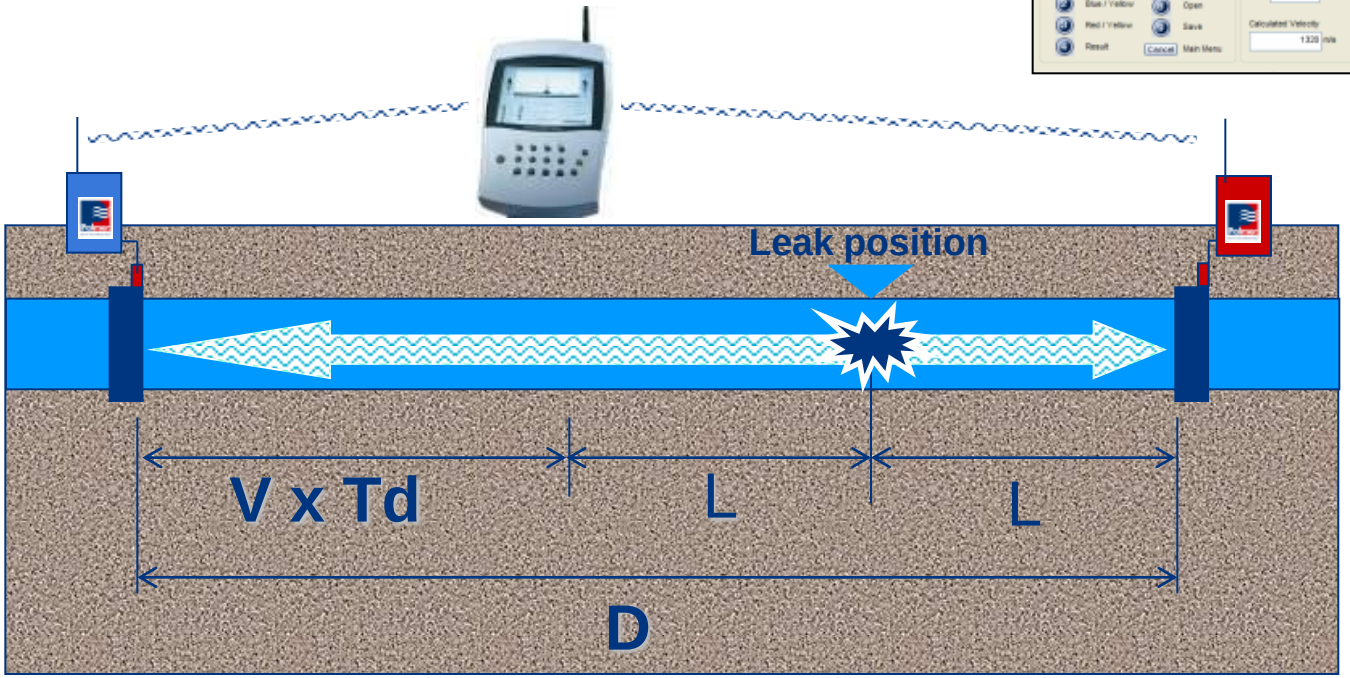
Leak Detection - Correlation

Halma Water Management

The correlation formula

$$L = \frac{D - (V \times Td)}{2}$$





Leak Detection - Correlation

Halma Water Management

MicroCorr 7
PDA/PC based Leak Noise Correlator

Analogue sensors
PDA/PC interface
Highly portable
Bluetooth technology

MicroCorr DX
Digital Leak Noise Correlator

Digital sensors, transmission and processing
Compact design

MicroCALL +
Digital Leak Noise Correlator

Automatic 3 outstation correlation
Colour graphics
Advanced software

SoundSens “i”
Correlating Noise Loggers

Infra Red download
Fast deployment
Custom recording
Cases can be linked

Leak Detection – Confirmation

Halma Water Management

Lmic
Electronic listening stick

Portable
Lightweight unit
Easy "trigger" operation
Volume/sensitivity rotary control
Excellent performance

Xmic
Digital Ground Microphone

Increased functionality, display, filters
Minimum (noise) level profiling (MLP)
Wind / airborne noise protected foot

Xmic Lite
Ground Microphone System

High quality sound
Auto and manual filtering
Multi function display
Minimum (noise) level profiling (MLP)
Hand probe attachment

Leak Detection – Customer Side Leakage

Halma Water Management

Leakfrog
Meter leak analyser

Used on pulse output meters
Monitors minimum flow rate

Innovative low cost design
Rapid deployment
Shows leakage, wastage and flow
Rugged & lightweight
Long battery life

SMART View
Automatic meter reader

Leak alarm for the home

Wirelessly connects to the SMART Log meter reader attached to the pulse meter

Enables customer to view their total, average, previous and current water consumption

Leak Finder
Pinpointing system

Primarily designed for CSL but also effective for difficult leak situations (e.g. plastic pipelines)

Highly accurate
Works on pipes with a smooth internal bore up to 50mm diameter

Halma Water Management

Pressure Control Solutions

Pressure Control Solutions

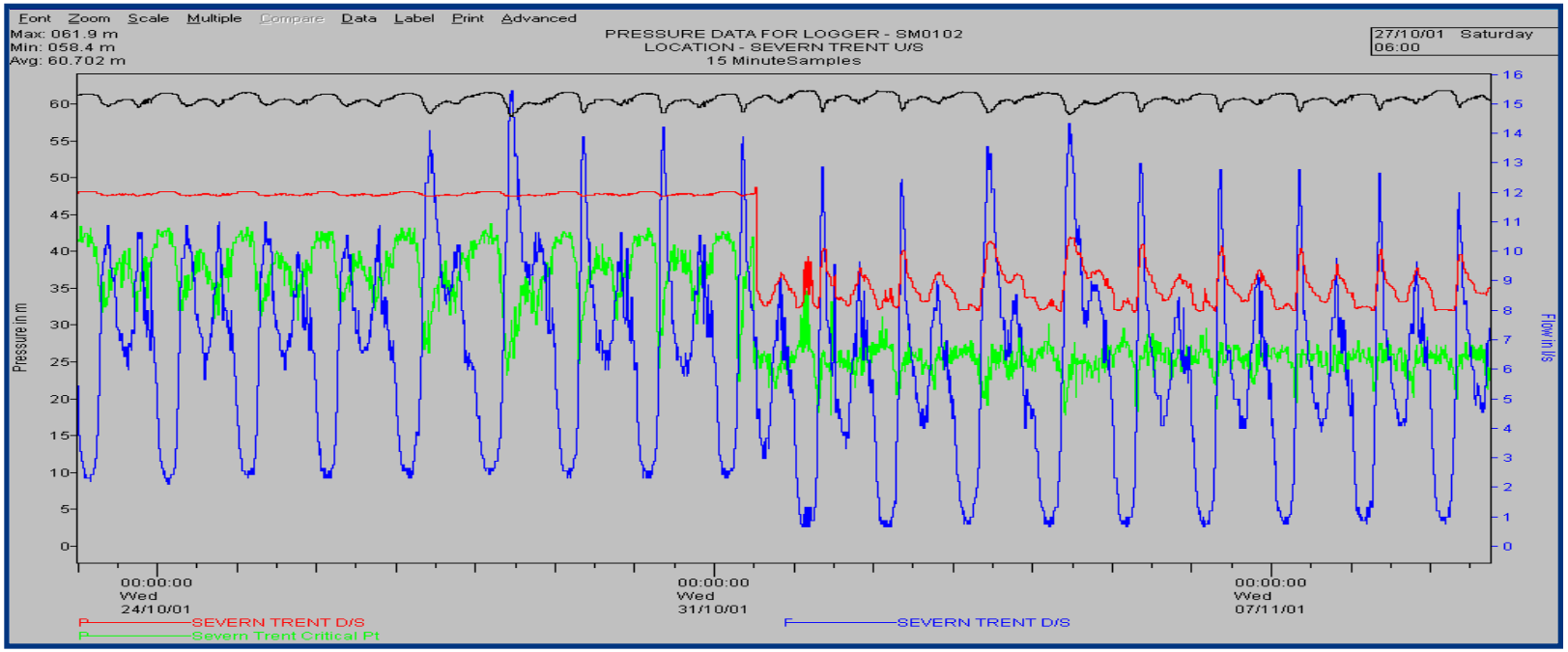
Palmer environmental · HYDREKA www.hydreka.fr · RADCON TECHNOLOGIES LTD · Fcs Fluid Conservation Systems

A HALMA COMPANY

Why Control Pressure?

Halma Water Management

- To save water by reducing pressure when demand is low (e.g. at night)
- To reduce the quantity of water lost through leakage
- To extend asset life
- To reduce burst frequency

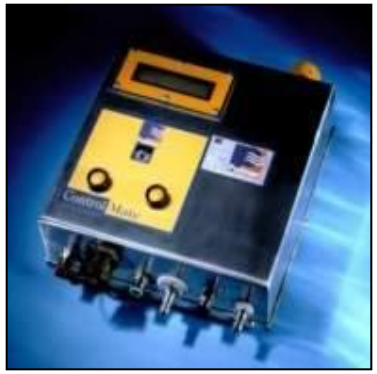


HWM Pressure Management Solutions

Halma Water Management

Hydraulic Actuator
Accurate PRV Control

Long life brass build
Acts as the interface between hydraulic PRV and electronic controller
Fitted in place of the adjusting screw on the standard pilot on PRV
Easy to install



ControlMate 2
Pressure Management System

Enables pressure into a zone to be switched between two pre-set values (low and high)

Easy to use.
Self contained.
5 year battery life.

ControlMate FM
Pressure Management System

Enables pressure into a zone to be continually adjusted according to actual demand (flow modulation) or a pre-programmed time.

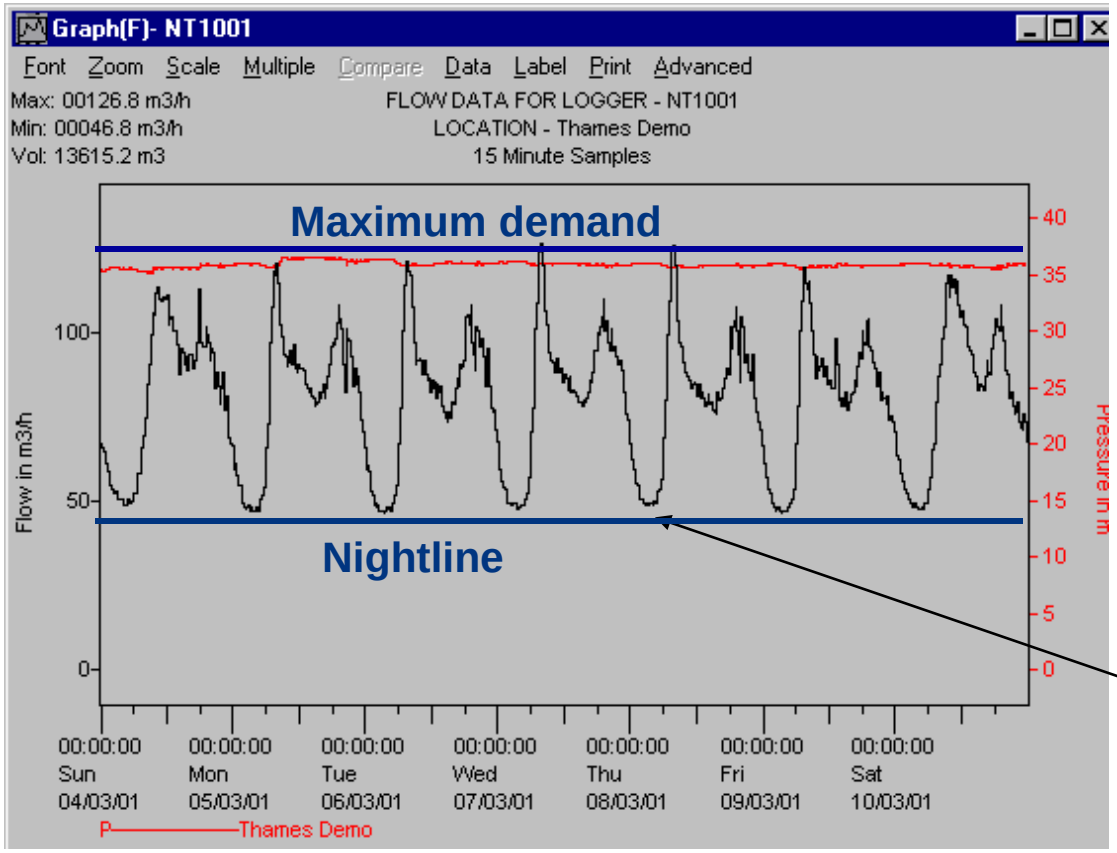
Maximum potential water savings.

ControllerCom
High Visibility Comms

Can be fitted to any HWM controller
Logs data
Two way SMS reporting
GSM communication
Alarm option
Fully adaptable
Versatile set up options.

Water Management Without PRV Controller

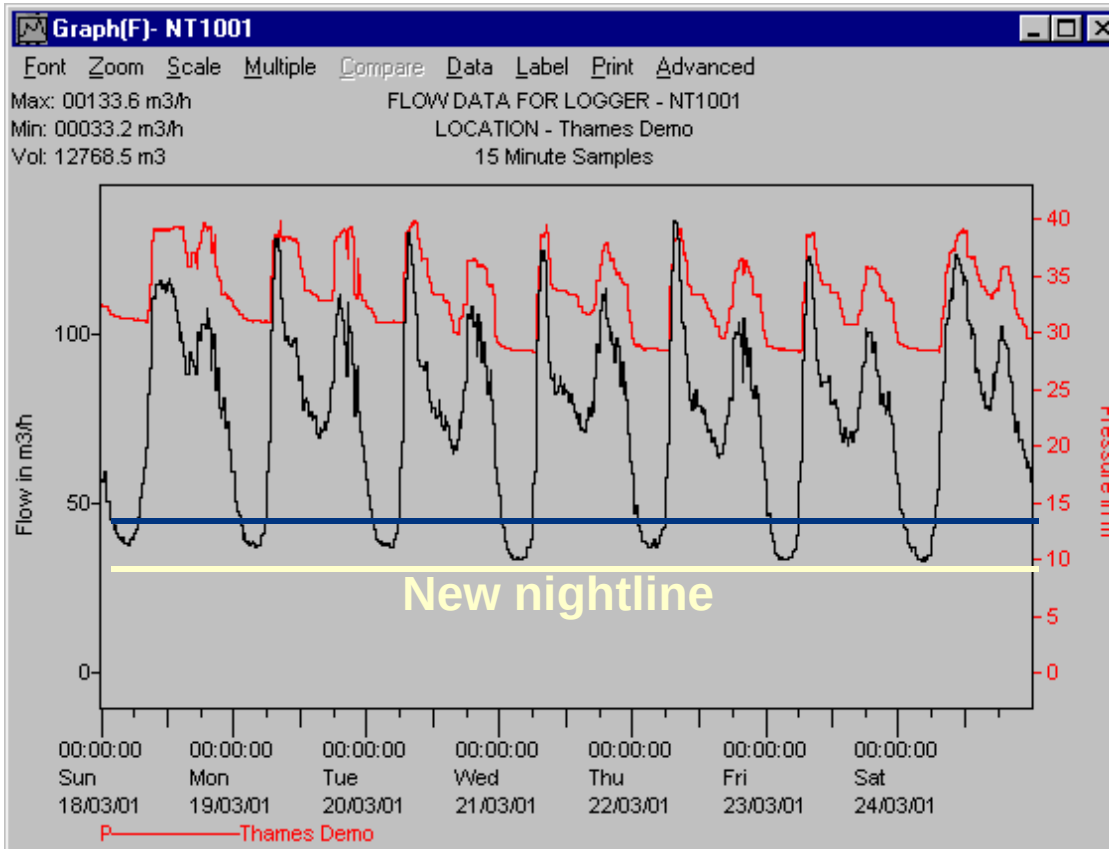
Halma Water Management



- Fluctuating demand
- Constant pressure
- Total week's flow in this example: 13.6Ml

Lowest demand. Pressure much too high at night.

Water Management With PRV Controller



- Fluctuating demand
- Pressure adjusted accordingly
- Pressure falls and the flow drops
- Total weeks flow in this example: 12.8Ml

Immediate water saving of 6%

Halma Water Management

Data Logging Solutions

Data Logging
& Telemetry Solutions

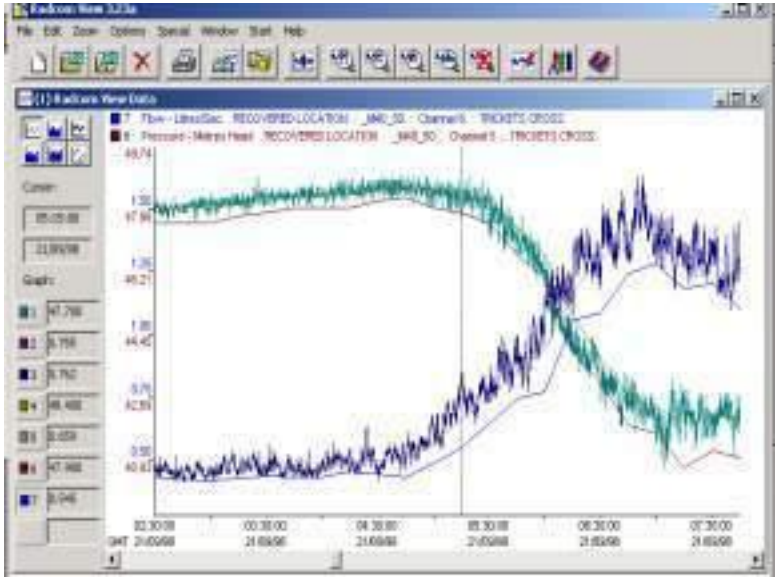
Palmer environmental · HYDREKA www.hydreka.fr · RADCON TECHNOLOGIES LTD · Fcs Fluid Conservation Systems

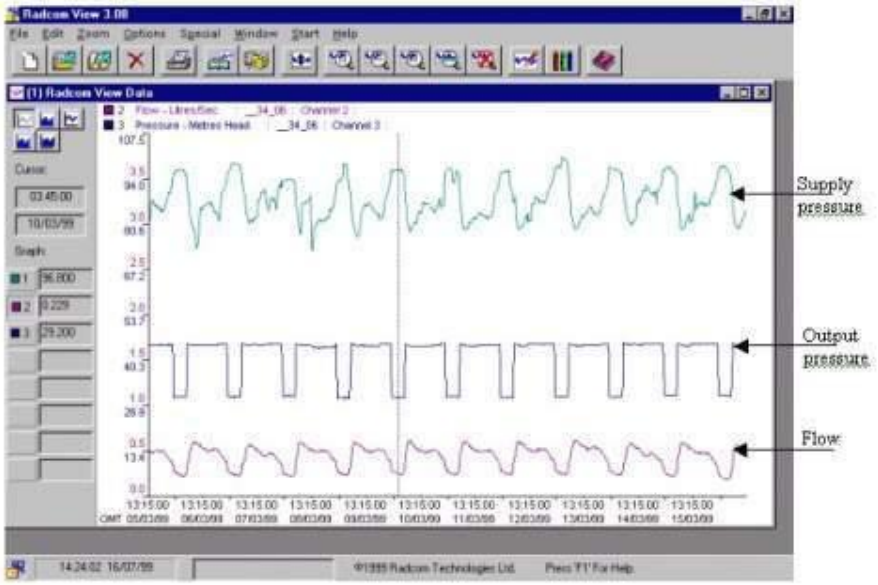
A HALMA COMPANY

Why use Data Loggers?

Halma Water Management

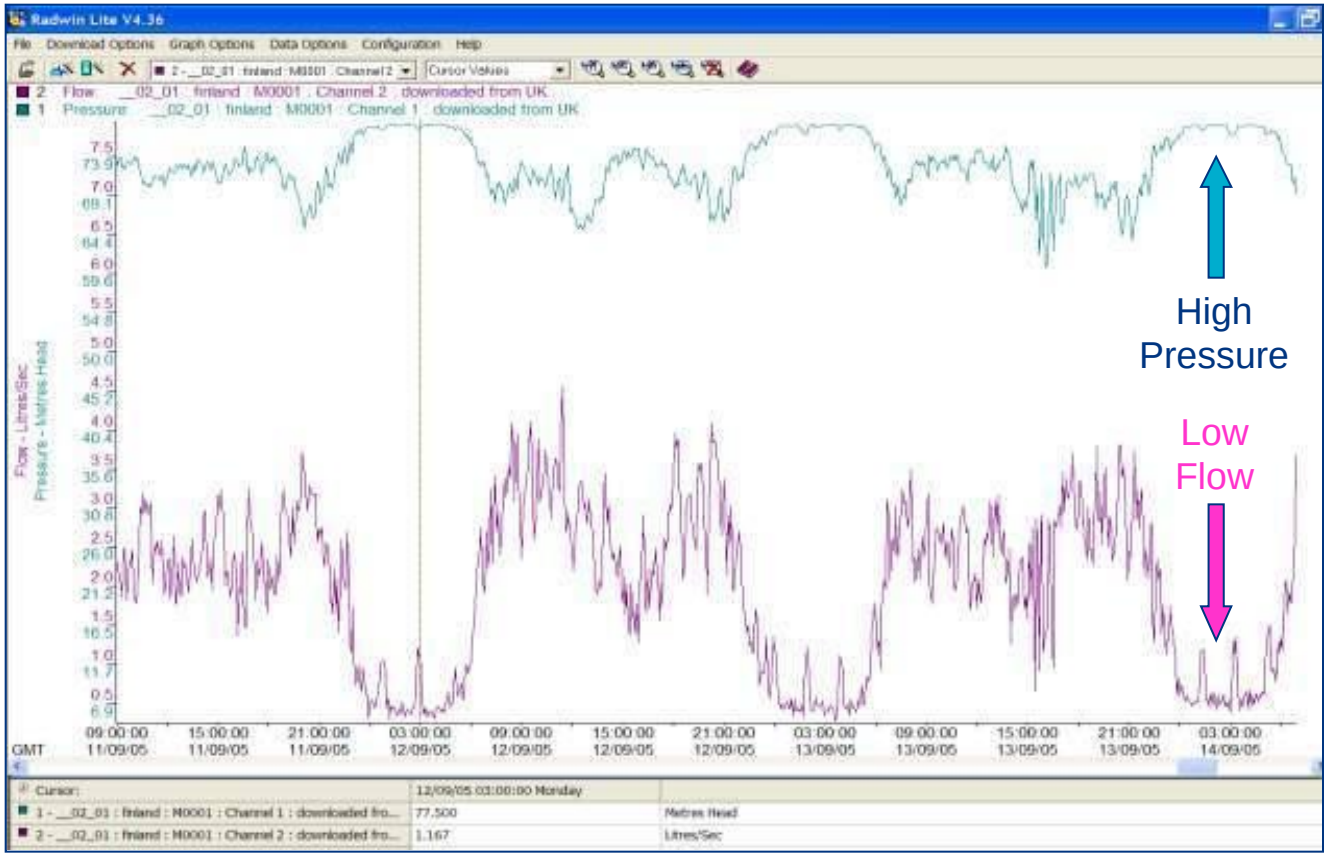
- To gather data on network performance
- To plan network expansion, pressure zones, DMA's
- To create network models
- To ensure regulatory compliance
- To measure leakage
- To verify performance of Pressure Reducing Valves (PRV)





Why use Data Loggers?

Halma Water Management



Data received from a two channel logger recording flow and pressure from the same site.

Data collected from the logger shows that when the flow of water is low during the night, the water pressure increases. This feeds leaks and increases water lost through leakage.

In this example, HWM provided the equipment needed to regulate the pressure automatically, thereby making instant savings in water consumption.

HWM Data Logging Solutions

Halma Water Management

- **Portable Data Logging**

  LoLog, LoLog LL/Vista, Pressure Transient

- **Data Logging with Telemetry Options**

  MultiLog LX, MultiLog SMS/GSM, MultiLog GPRS

Data Logging – Portable Solutions

Halma Water Management

LoLog
Single Input Channel

Can be attached to any pulse output meter.
Can be used to help planners assess demand in residential areas.
Waterproof and portable
IP68 submersible
5 year battery life
Infra Red
Rugged Design

LoLogLL / Vista
Two Input Channels

All LoLog features with one or two input channels

Memory 16,000 readings
LCD display (Vista only)
Vista can be used as a solid state pressure gauge, or local indicator for other electrical signals (e.g. digital flow meters)

Pressure Transient
Specialised logger

Ideal for monitoring rapid pressure changes in water pipes generated by pumps, Pressure Reducing Valves (PRV) and other valves.
Supplied with one input for an external pressure transducer.

Data Logging with Telemetry Options

Halma Water Management

MultiLog LX
Mid Range Data Logger

One or two digital flow input capabilities.
Internal pressure sensor
Advanced SMS data compression
Ideal for monitoring flow and/or pressure to assess demand, leakage and conformance.
5 year battery life.

MultiLog SMS/GSM
Advanced Data Logger

PSTN, SMS & GSM
Up to 4 inputs.
Monitors any combination of digital or analogue signals.
No maintenance for 5 years.
Can perform dynamic flow and pressure analysis of network models.
Can conduct "fast sampling".
5 year battery life.

MultiLog GPRS
Cellular Telemetry Logger

Downloads data to PC by sending an email directly from the logger.
Can send hourly data if required for near real time monitoring – making it ideal for dynamic flow and pressure analysis of network models.

Data Logging Projects

Halma Water Management

- Scottish Water – establishment of DMA's across the country 6,000 loggers
- 3-Valleys – Telemetry reporting for network management
- Thames Water – Commercial Meter Logging – 10,000 logger units
- Jahor Bahru, Malaysia – 1,200 network loggers installed

There are currently over 80,000 data logger units supplied worldwide

Halma Water Management

Automatic Meter Reading Solutions

Automatic Meter Reading Solutions

Palmer environmental · HYDREKA www.hydreka.fr · RADCOM TECHNOLOGIES LTD · FCS Fluid Conservation Systems

A HALMA COMPANY

Automatic Meter Reading - SMART System

Halma Water Management

Low cost alternative to fixed network AMR

Rapid drive-by download speeds

Can be used to:

- ***provide accurate customer billing***
- ***monitor customer side leakage,***
- ***enforce drought restrictions***
- ***apply rising block and/or seasonal tariffs***
- ***detect meter fraud.***

Automatic Meter Reading - SMART System

Halma Water Management

SMART Log
Pulse Meter Reader, Logger and Transmitter

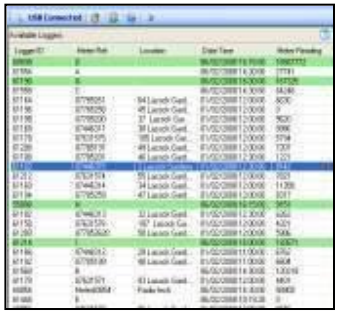
Can log 12 months data at 30 minute intervals Transmits at 2 second intervals for rapid drive by

2 way wireless download Can be retrofitted to most meters in minutes Waterproof to IP68

SMART USB R*
Patrol Vehicle Receiver

Provides two way data transfer. Easily moved from one vehicle to another. Rapid drive by download speed. A 1 month profile at 30 minute intervals can be received in 2-3 seconds.

Data is protected & secure and can be received by a vehicle up to 100m away.



SMART Patrol
Drive By PC Software

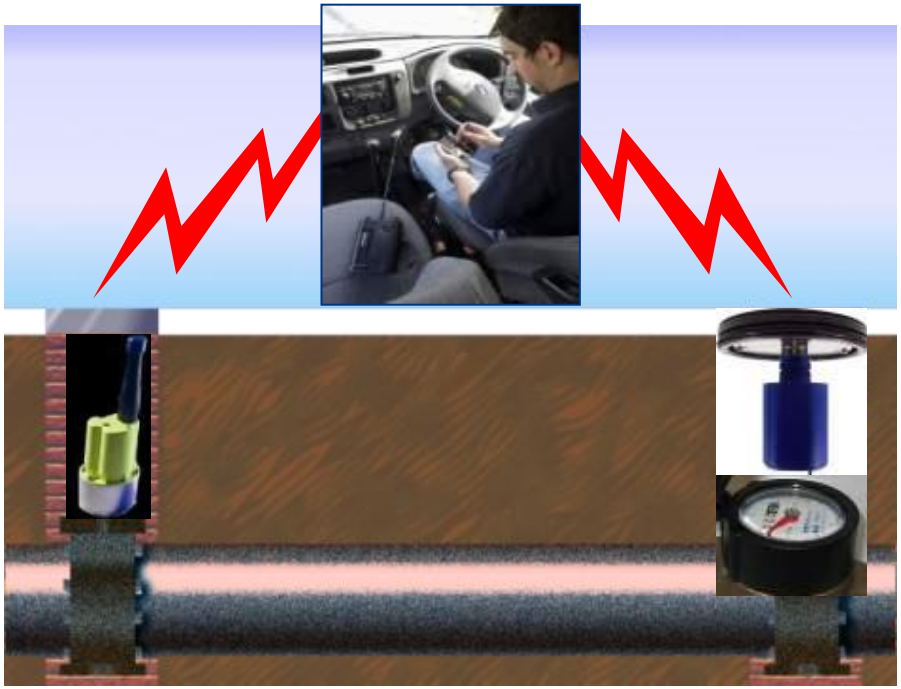
User friendly display captures, analyses and constructs flow history for field and office analysis.

Meter reader can plan route and install new devices in the field. Colour coded progress indicator bars maximise efficiency

Automatic Meter Reading - SMART System

Halma Water Management

Introducing
the World's First Integrated
AMR and Leak Detection Solution



With the new SMART Log meter reader, patrol teams can now collect combined data for both leak detection and meter reading via the same handheld Patroller PDA saving time, petrol and manpower.

Halma Water Management

Flow Measurement Solutions for the Water Network

Flow Measurement Solutions

Palmer environmental · HYDREKA www.hydreka.fr · RADCON TECHNOLOGIES LTD · Fcs Fluid Conservation Systems

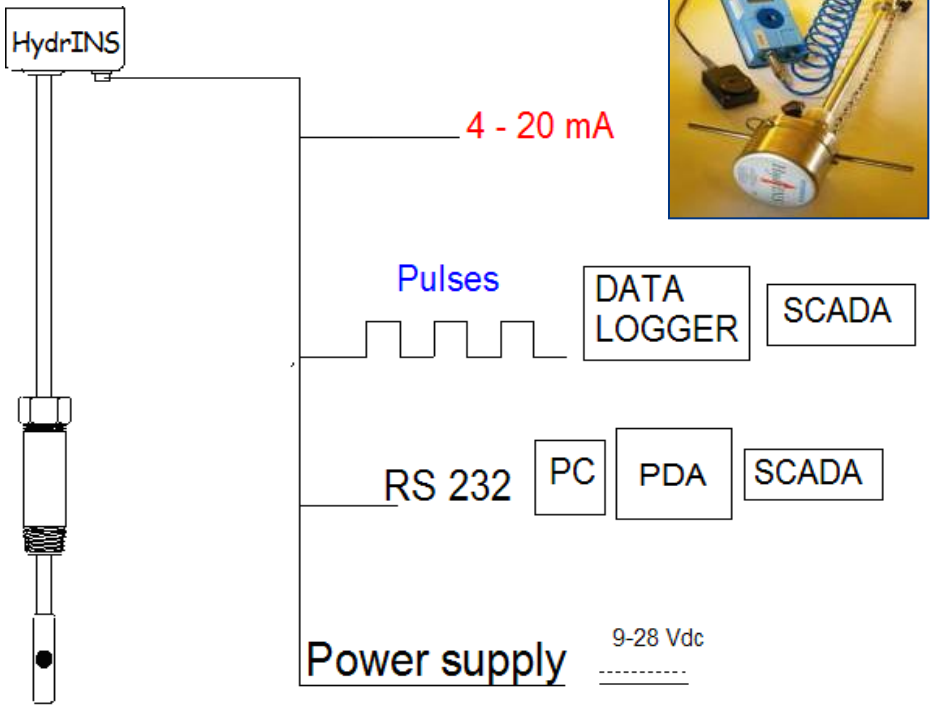
A HALMA COMPANY

Flow Measurement Solutions – HydrINS 2

Halma Water Management

HydrINS 2 Electromagnetic Insertion Flow-Meter with Optional LCD Screen

Flow and pressure measurement.
Measures water velocity in full pipes.
Advanced processing techniques provide high accuracy even at low flow rates.
Easy installation with hot-tap capability.
Choice of stem lengths.
Submersible transmitter.
Sturdy construction (3mm thickness on 700mm and 1000mm stem lengths)



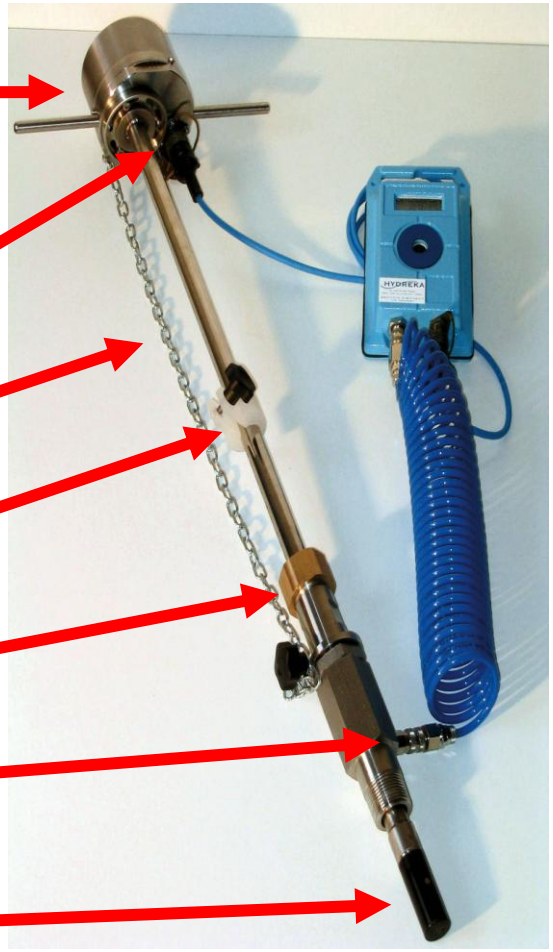
HydrINS can be quickly connected to computer devices, external loggers or SCADA systems and can operate using mains or battery power.

Flow Measurement Solutions – HydrINS 2

Halma Water Management

HydrINS 2 Electromagnetic Insertion Flow-Meter with Optional LCD Screen

Flow and pressure measurement.
Measures water velocity in full pipes.
Advanced processing techniques provide high accuracy even at low flow rates.
Easy installation with hot-tap capability.
Choice of stem lengths.
Submersible transmitter.
Sturdy construction (3mm thickness on 700mm and 1000mm stem lengths)



Flow Measurement Solutions – HydrINS 2

Halma Water Management

HydrINS 2 Electromagnetic Insertion Flow-Meter with Optional LCD Screen

Flow and pressure measurement.
Measures water velocity in full pipes.
Advanced processing techniques provide high accuracy even at low flow rates.
Easy installation with hot-tap capability.
Choice of stem lengths.
Submersible transmitter.
Sturdy construction (3mm thickness on 700mm and 1000mm stem lengths)

HydrINS is one of the most accurate flow measuring devices available on the market, particularly at low flows

Probes can be supplied in 4 different insertion lengths depending on the pipe size:

300mm (12”)
500mm (20”)
700mm (27”)
1000mm (39”)

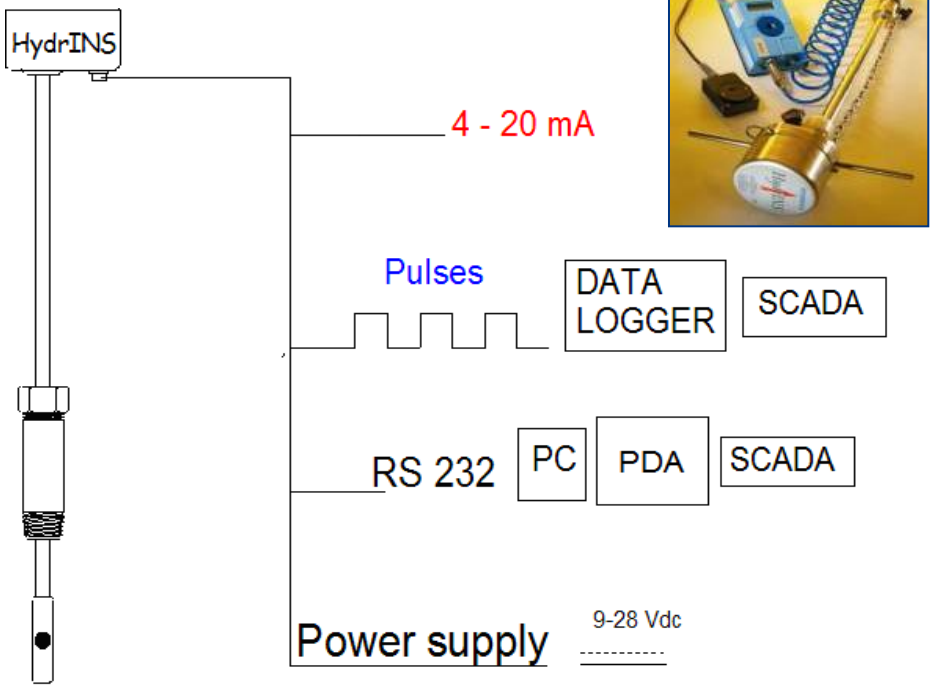
They can be used on any pipe between 100mm (4”) to 8000mm (360”)

Flow Measurement Solutions – HydrINS 2

Halma Water Management

HydrINS 2 Electromagnetic Insertion Flow-Meter with Optional LCD Screen

Flow and pressure measurement.
Measures water velocity in full pipes.
Advanced processing techniques provide high accuracy even at low flow rates.
Easy installation with hot-tap capability.
Choice of stem lengths.
Submersible transmitter.
Sturdy construction (3mm thickness on 700mm and 1000mm stem lengths)



HydrINS can be quickly connected to computer devices, external loggers or SCADA systems and can operate using mains or battery power.

Flow Measurement Solutions – HydrINS 2

Halma Water Management

HydrINS 2 Electromagnetic Insertion Flow-Meter with Optional LCD Screen

Flow and pressure measurement.
Measures water velocity in full pipes.
Advanced processing techniques provide high accuracy even at low flow rates.
Easy installation with hot-tap capability.
Choice of stem lengths.
Submersible transmitter.
Sturdy construction (3mm thickness on 700mm and 1000mm stem lengths)

The head is 100% watertight and programmable to give spot values and totalised readings in forward or reverse direction.

Two batteries, both site replaceable provide 30 months battery power logging at 30 second samples.

Flow Measurement Solutions - ChronoFLO

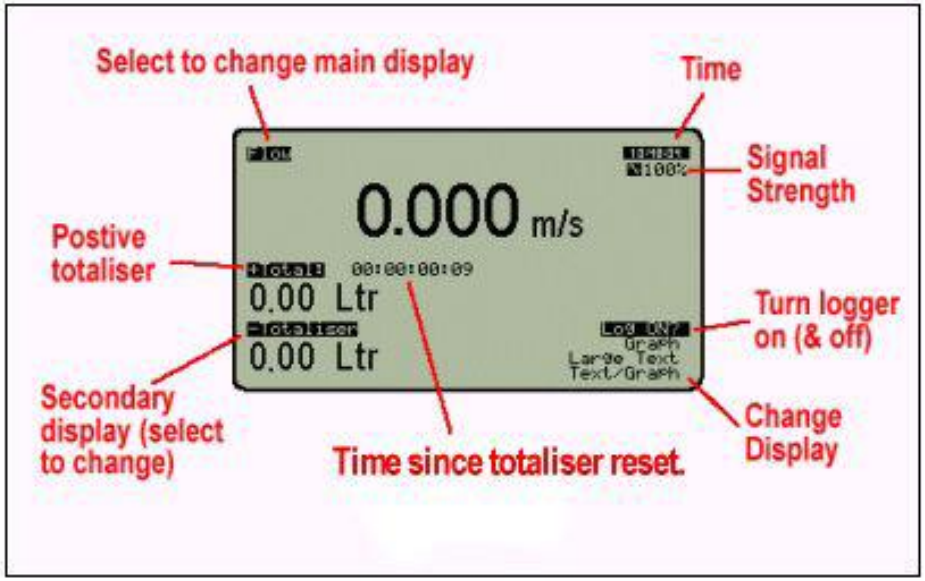
Halma Water Management

ChronoFLO Clamp On Transit Time Flow-Meter

Non invasive flow measurement
No loss of pressure or risk of leakage
Stable flow measurement in difficult conditions on most pipe material
Advanced digital technology
Highly accurate even at low flows
Portable or fixed using battery or mains
Rugged for field use and easy to deploy
LCD displays flow rate in both directions
Optional gauge measures pipe thickness

ChronoFLO has no contact with the fluid in the pipe so is suitable for drinking water and effluents

It is easy to install and can be used on a wide range of pipe sizes



Flow Measurement Solutions - ChronoFLO

Halma Water Management

ChronoFLO Clamp On Transit Time Flow-Meter

Non invasive flow measurement
No loss of pressure or risk of leakage
Stable flow measurement in difficult conditions on most pipe material
Advanced digital technology
Highly accurate even at low flows
Portable or fixed using battery or mains
Rugged for field use and easy to deploy
LCD displays flow rate in both directions
Optional gauge measures pipe thickness

- **Measure Flow** – Measure Flow now
- **Site Setup** – Enter site parameters
- **System Setup** – Your meter preferences
- **Data Management** – File and Logging options
- **Diagnostics** – Advanced functions
- **Charge Battery** – Charge battery
- **Setup Summary** – View important settings

Any Questions?

Halma Water Management

A HALMA COMPANY