hydrosense™

Professional Water Leak Detection Systems

By VIMPEX

New **hydrosense**™ Professional Water Leak Detection Systems

What is **hydrosense**™ and why is it different?

Hydrosense™ Water Leak Detection Systems continuously monitor for potentially devastating water leaks in buildings. This document offers examples of the enormous cost of water damage to a business and reveals the peace of mind you achieve knowing Hydrosense™ is protecting your most valuable assets.

Hydrosense™ systems deliver a new standard in water leak detection. Unlike other water leak detection systems, Hydrosense™ is fully customisable and configurable allowing connection to Building Management Systems (BMS) and a wealth of other vital supporting systems. Hydrosense™ continuously monitors for water leaks protecting a company's building and assets year in year out.

About the company behind **hydrosense**™

Vimpex is a vibrant, privately-owned company with businesses located in both the UK and Sweden. Established in 1994, Vimpex is a specialist supplier of Fire Detection, Alarm and Evacuation systems and associated products; Emergency Services and Military equipment and solutions; and specialist Industrial equipment to an international customer base. Vimpex is recognised as a professional and progressive business with leading brands in its fields of activities.

Vimpex offer comprehensive product training on its full range of products. It also provides outstanding customer and after-sales service and has an established service centre.

Hydrosense™ is the company's most recently developed product and is set to put Vimpex at the forefront of water leak detection technology.

For more information about Hydrosense™ or Vimpex please visit our web site vimpex.co.uk. If you would like contact from one of our sales managers please email sales@vimpex.co.uk or call our customer service team on +44 (0)1702 216999.

Protection from the Greatest Risk to Buildings and Managed Systems

By 2020, there will be over 5 billion internet users, with over half of them accessing the internet over handheld, tablet devices meaning over 80 billion connected devices worldwide. This connectivity is spreading to our daily lives bringing the three silos of work, home and our surrounding environment into one seamless experience. Protecting the technology that provides us with this capability is so important that every precaution must be taken to prevent damage from fire or water.

Despite the understandably significant resources spent on mitigating loss through fire, there is a much greater threat to business continuity: that of disruption to business and asset damage through water leaks.

Statistics show that the most likely cause of claims in apartment buildings, hotels, retail premises and commercial buildings is water damage. It is now a commonly accepted fact by UK insurers that water leakage is now the costliest and most common claim made by commercial customers with a total loss in the UK alone approaching £800 million.

£12K per minute

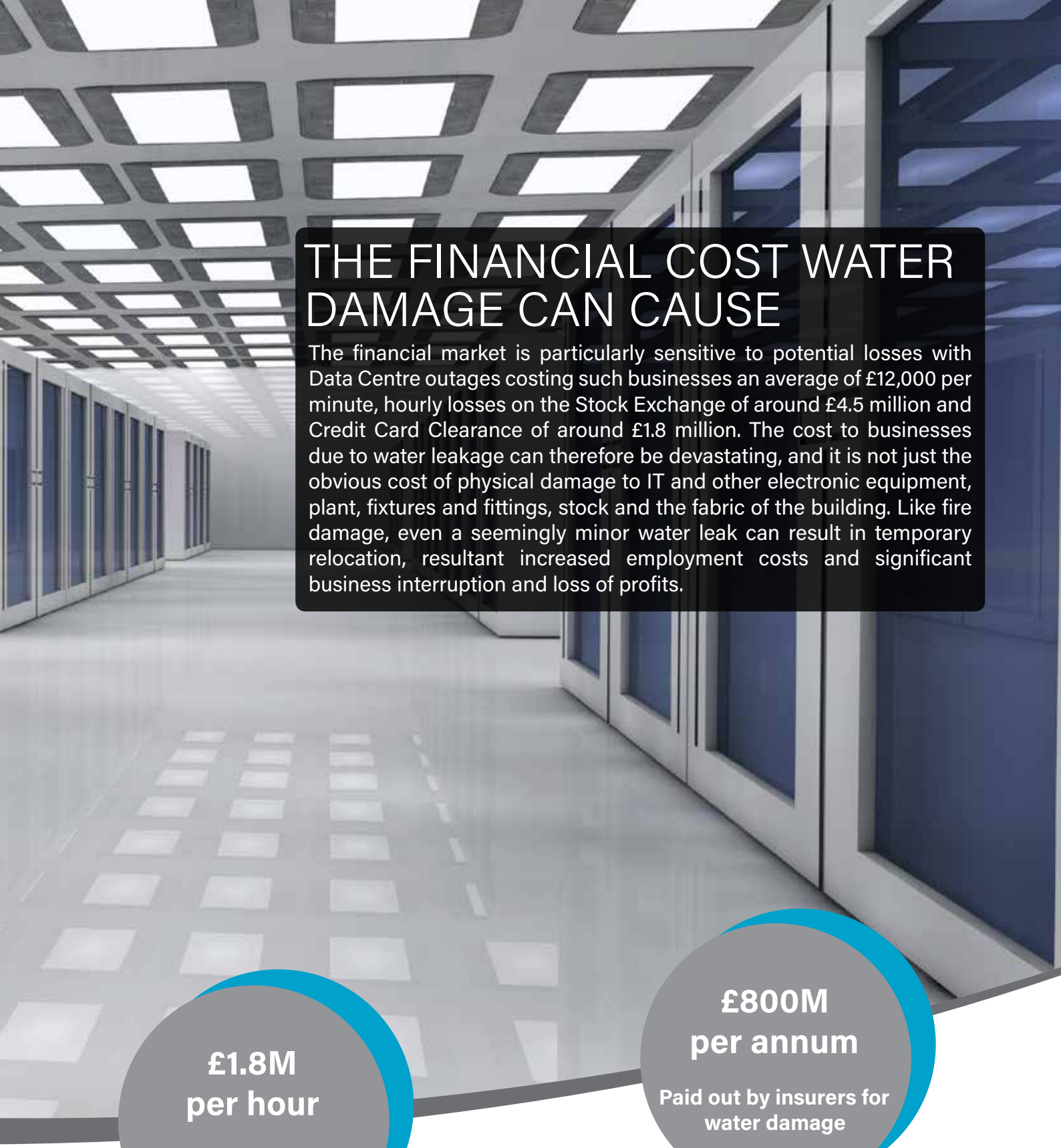
Data Centre Outage averages

Data Centres are at the heart of modern life and are now key to running almost every business and household. Water damage at these sites is highly disruptive.

£4.5M per hour

Downtime could cost a trader on the Stock Exchange

Now almost completely reliant on modern technology, every second offline costs money.



THE FINANCIAL COST WATER DAMAGE CAN CAUSE

The financial market is particularly sensitive to potential losses with Data Centre outages costing such businesses an average of £12,000 per minute, hourly losses on the Stock Exchange of around £4.5 million and Credit Card Clearance of around £1.8 million. The cost to businesses due to water leakage can therefore be devastating, and it is not just the obvious cost of physical damage to IT and other electronic equipment, plant, fixtures and fittings, stock and the fabric of the building. Like fire damage, even a seemingly minor water leak can result in temporary relocation, resultant increased employment costs and significant business interruption and loss of profits.

£1.8M per hour

Potential Cost of Downtime

When a customer's ability to pay goods on a credit card or their mobile banking fails, there's a significant cost to the provider.

£800M per annum

Paid out by insurers for water damage

According to UK insurers, water damage far outstrips the cost of fire.

hydrosense™ is designed to life safety alarm standards

Utilising fire alarm technology in the design of Hydrosense™ provides the reliability and integrity of approved fire detection systems, meaning there is virtually no risk of failure, downtime, and significantly fewer false alarms.

Introducing **hydrosense**™

The New Standard in Water Leak Detection

The only way to mitigate the risk of water damage is to continuously monitor for water leaks. Risk assessment of potential water damage and the installation of water leak detection systems are increasingly being recommended by commercial insurers and is often a requirement for full cover.

Leading the way in water detection technology is the new Hydrosense™ system from Vimpex. It includes both Conventional and Addressable solutions and is designed to be infinitely reliable, with many of its features also found in systems designed to ensure life safety.

You get more with **hydrosense**™

Hydrosense™ Water Leak Detection Systems are designed to protect areas where water ingress could seriously damage electrical, communication and computer networks. It continuously monitors for water leaks around the clock, year in year out and has the facility for 72-hour battery standby in the event of power failure. Should a leak be detected the control panel can signal to a BMS or activate mechanical control devices like water shut-off valves. An audible alarm can be activated via the Hydro-Cryer™ which broadcasts an unambiguous voice message, avoiding confusion with other sounders on site.

Hydrosense™ systems provide both linear detection using Hydrowire and point detection using probes. Hydrowire is a flexible cable which will continuously monitor large areas divided into detection zones.

When even a small amount of water or moisture comes into contact with Hydrowire it will trigger the alarm.

Point detection is provided by Hydrosense™ Probes; these are fixed to the floor or other areas such as A/C drip trays. They can be height adjusted to give the required detection level.

Both Hydrowire and Hydrosense™ Probes are connected to the system via Hydrosense™ Connection Interfaces

Utilising life safety technology in the design of Hydrosense™ provides the reliability and integrity of approved fire detection systems, meaning there is virtually no risk of failure, downtime and significantly fewer false alarms.

Choosing your hydrosense™ system

Hydrosense™ offers two robust and reliable systems. Hydrosense™ HS is a conventional system and Hydrosense™ ID an addressable system. Both employ the same technology to sense a water leakage, however the methods used to convey the detection of water signal back to the user and system capabilities are different.

The choice of HS or ID system comes down to what is required for the building. A smaller, less complex installation would suit a Hydrosense™ HS Conventional System.

If the building is large, complex or the site in question requires many detection zones or a variety of different effects to by activated by the control system, then a Hydrosense™ ID Addressable System may be the better choice.

Hydrosense™ ID has advantages in system programming, as it has the ability to add logic to devices to provide a completely tailored system utilising similar cause and effect programming to an addressable fire detection control system.

Programming for effective cause and effects

- Leak detection probes and Hydrowire can be freely allocated to any Zones. Zones can also be grouped to trigger preconfigured outputs or relays.
- System logic can interpret leak scenarios and drive desired outputs.
- Control water shut-down valves
- Control Pump activation
- Isolate power to areas where a leak has been detected
- Location text at panel for each Leak Detection Probe / Hydrowire
- Every interface is uniquely addressed and every input is allocated a sub-address with location text
- Fast response to alarm conditions via a manual call point

hydrosense™ offers a sophisticated protocol

The Hydrosense™ ID system protocol is the language used to communicate between the panel and each device on the loop. Hence for the system to work each device on the loop must speak the same language. It is recommended that only approved Hydrosense™ devices are used on the loop to ensure 100% compatibility, reliability and system integrity.

The Hydrosense™ ID protocol is a dedicated 2-wire protocol that has been designed to provide power and data over a single pair of cables for high integrity systems. The protocol is designed to provide a fast response to water leak conditions, resilient to external interference and supports loop powered devices. Importantly, a leak detected will always take priority over any other data on the loop.

System Integrity and Protection for Peace of Mind

With any system, reliability and integrity are essential. The majority of systems hopefully remain dormant for the vast majority of time. When the need arises and a water leak occurs, then the system must operate as designed. Buildings go through many changes through their life but their control and detection systems are part of the infrastructure. System robustness and reliability then are vital. Protection of the system cabling against short and open circuits is a critical function. These issues do not just arise at installation. Mechanical damage to water detection systems can happen at any time and monitoring for damage to critical systems is very important. Hydrosense™ ID manages these conditions through the use of the loop configuration and Short Circuit Isolators (SCI's). SCI's protect the loop continuously and if they detect a short circuit condition they open that section of loop to maintain communication. Once the loop is broken the Control Panel senses that the loop is open circuit, and changes from driving the loop from one end to driving the loop from both ends, hence detection is only lost from devices between each pair of SCI's. It is recommended that SCI's are installed at the start and end of each zone.

hydrosense™ APPLICATIONS

The Hydrosense™ ID system is ideal for creating bespoke application-specific installations, through our loop configuration software, which is intuitive and allows every input and output to be individually configured and therefore controlled via a cause and effect matrix.

CRITICAL INFRASTRUCTURE - REMOTE SITES

Many sites that handle communications, utilities infrastructure and data distribution are often far removed from our towns and cities, meaning that any leaks cannot be quickly dealt with resulting in significant capability loss and long response times by service and repair teams.

Hydrosense™ ID however can literally stop leaking water by use of our ID Mains Relay Controller. This device can switch mains electrical supplies meaning that solenoid valves and related plant equipment can be shut down with no human interaction.

A GSM dialler can also be incorporated into the system, allowing engineers to be notified and the situation to be monitored remotely.

The Mains Relay Controller can also be connected to a manual call point meaning that manual interaction with the system can also be configured and controlled via the cause and effect matrix.

BATHROOM LOCAL SHUTDOWN

Bathroom flooding is an ever-growing problem, emphasised by an increasing trend for multi occupancy and high density apartment buildings.

Hydrosense™ ID can provide a solution through the Hydrosense™ Probe. Siting a small number of Probes around each bathroom will give an early warning of a flood situation.

Fitting each Probe with a Universal Mounting Kit will also prevent inconvenient false alarms by distinguishing between normal cleaning and an actual leak.

Our sophisticated cause and effect programing software will also result in any of the following outputs:

- Local bathroom water supply shut down.
- Local electrical supply isolation
- Voice enhanced sounder activated.

SPREAD OF LEAK - TWO STAGE NOTIFICATION

The Hydrosense™ ID Control Panel incorporates a powerful cause and effect framework unique to Hydrosense™ Systems.

An example of this feature would be on an application that requires a single probe to signal a local alarm only. However, if successive Probes were then to be activated, the control panel would recognise this as a coincidence alarm, resulting in a full alarm condition being signalled on the system and resultant outputs sent to shutdown critical processes, plant or other equipment.

Addressable Module

Point Detection (Probe)
and/or
Linear Detection (Hydro-Wire)

Addressable Module

Point Detection (Probe)
and/or
Linear Detection (Hydro-Wire)

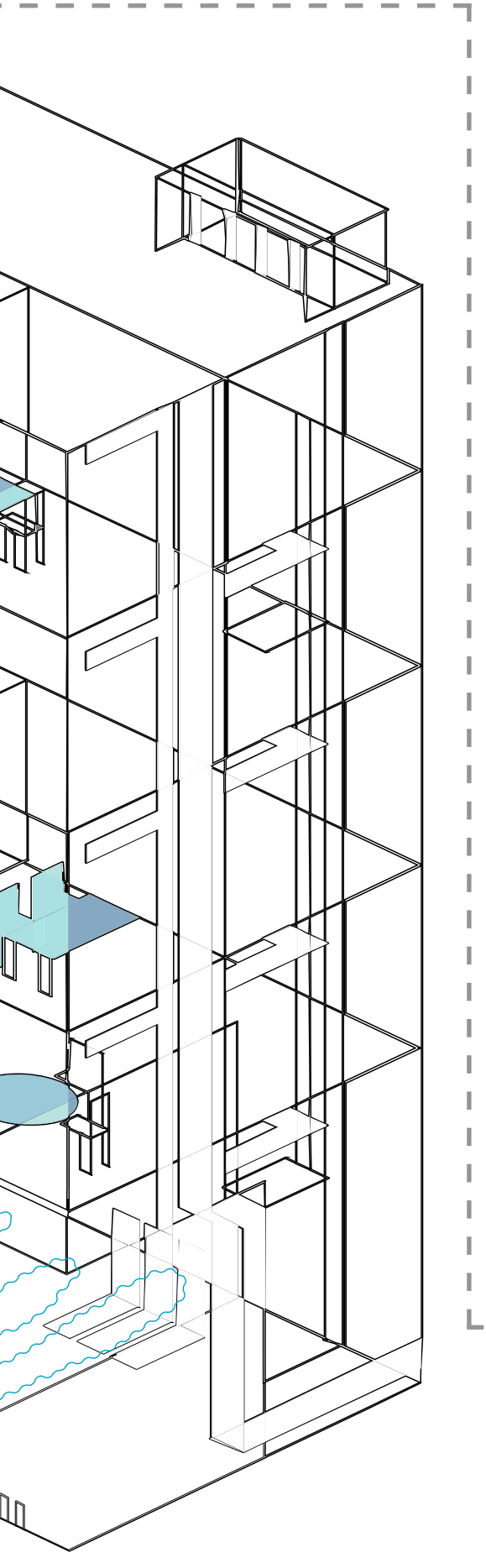
Addressable Module

Point Detection (Probe)
and/or
Linear Detection (Hydro-Wire)

Addressable Module

Point Detection (Probe)
and/or
Linear Detection (Hydro-Wire)

Example of **hydrosense**™ zoning



Hydrosense™ Leak Detection Probe
Ideal for detecting water in a specific location, such as a T-point or plumbing.

Hydrowire
Ideal for installation in floor voids and along pipework.

Addressable Module
Allows detection devices to interface with the system.

Remote Indicator
Ideal for installation near to the detection zone, indicating there is a leak.

SMS Communication

Voice Enhanced Sounder

Plant Shutdown

Shut-Off Valve Activation

Addressable Control Panel

Specify Which System Will Protect Your Assets from the Greatest Risk to Buildings and Managed Systems

The two systems Hydrosense™ HS (Conventional) and Hydrosense™ ID (Addressable) employ the same technology to sense a water leakage but the technology that is used to convey those signals back to the user and the treatment of the information differs. Both systems support Hydrosense™ Probes, Hydrowire Detection Cable and Call points (for manual activation of the system).

Both systems are high integrity systems that employ watchdog microprocessor technology that in an event of a microprocessor crash will automatically re-boot itself. Standby batteries are also a standard feature so that in a mains fail situation the system will continue to operate and monitor the building for unwanted leaks.

hydrosense™ Addressable System

ID ADDRESSABLE CONTROL PANEL

Ideal for large and complex installations. Allows the user to address each module with location-specific information, as well as featuring fully configurable remote outputs. A single loop control panel can support up to 254 Probes, and over 12,700 metres of Hydrowire. Single and Dual Loop panels are available. Detection and Sounder Circuits are constantly monitored for faults. RS485 data bus allows up to 32 additional expander cards to be incorporated. Battery Backup.

ID ADDRESSABLE MODULE

Each module can support up to 100 metres of Hydrowire over two sub-addresses, a combination of Hydrowire (max. 50 metres) and one Probe or 2 Probes. 127 modules permitted per loop (each module has two sub-addresses). Each output is equipped with a bright blue LED to signify when an alarm condition has been activated.

ID HYDROSENSE™ LEAK DETECTION PROBE (2 DETECTION ZONES)

Ideal for areas where some floor-level moisture is permitted. Mechanically robust. Height-adjustable mounting bracket option. Available for both addressable and conventional systems.

HYDROWIRE™

Available in 5 and 10 metre lengths (other lengths on request). Simple plug and play connection. Consistent sensitivity. Aesthetically attractive. Available for both ID and HS systems.

ID MAINS RELAY CONTROLLER

The Mains Relay Controller is capable of switching a 250Vac 5A load, and is ideal for controlling solenoid valves or plant equipment.

The ID-WLMRC is a loop driven addressable device, and can be integrated into our powerful Cause and Effect matrix. The addressable element also allows the user to allocate the device with a location-specific name.

A single input is also provided on the device (in addition to the addressable circuit), and providing a closed contact to this input will result in the relay being energised. This makes it ideal for connection to a Manual Call Point or for signalling from other pieces of equipment.

hydrosense™ provides both **linear** detection and **point** detection

Hydrowire is a flexible and sensitive cable which will continuously monitor large areas. When even a small amount of water or moisture comes into contact with Hydrowire it will trigger an alarm. Point detection is provided by Probes, these are fixed to the floor or other surface such as an A/C drip tray. Our Universal Mounting Clip can be used to adjust the height.

hydrosense™ Conventional System

HS CONVENTIONAL CONTROL PANEL

A simpler and quickly configured control system for less complex installations. Plug and play like Hydrosense™ ID, the HS System is available with 2, 4 and 8 zones. Our HS ancillary device can be selected to give dedicated monitoring and alarm outputs per zone. HS panels also house RS485 outputs for maximum flexibility.

HS CONVENTIONAL INTERFACE MODULES

The Hydrowire and Probe interfaces with field wiring by use of the HS Connection Interface or HS Junction Box. These allow either one length of Hydrowire (up to 50 m) or one Probe per interface. Both modules are housed in an attractive polycarbonate enclosure.

ZONE BREAKER/EXTENSION CABLE

An ideal solution for Hydrowire zones that do not require constant coverage, or for areas requiring detection that are remote from the interface. Aesthetically attractive, almost effortless installation and is available in 1m, 3m and 10m lengths for flexibility.

MANUAL CALL POINT

Despite huge advances in technology, human interaction is still key in modern systems. A Manual Call Point is ideal for areas where regular maintenance takes place, so that an accidental leak can be quickly signalled and used to shut down plant and equipment.

HYDRO-CRYER™

The Hydro-Cryer is a Voice Enhanced Sounder, broadcasting a clear and concise pre-recorded message tailored for the Hydrosense™ system. The Hydro-Cryer builds upon the proven effectiveness of the Fire-Cryer voice enhanced Sounder range. Available for both addressable and conventional systems.

PRODUCT INFORMATION

Part Numbers	Addressable Hydrosense ID Panels
IDAP-S-1-230	Hydrosense ID Addressable Leak Detection Panel Single Loop
IDAP-S-2-230	Hydrosense ID Addressable Leak Detection Panel 2 Loop
IDAP-S-R-24	Hydrosense ID Addressable Leak Detection Repeater Panel 24V
IDAP-S-R-230	Hydrosense ID Addressable Leak Detection Repeater Panel 230VC
IDAP-LE1	Hydrosense Addressable Water Leak Detection Panel, Single Loop Expansion Card
IDAP-S-1-110	Hydrosense ID Addressable Leak Detection Panel Single Loop, 110V
IDAP-S-2-110	Hydrosense ID Addressable Leak Detection Panel 2 Loop, 110V
IDAP-S-R-110	Hydrosense ID Addressable Leak Detection Repeater Panel 110V

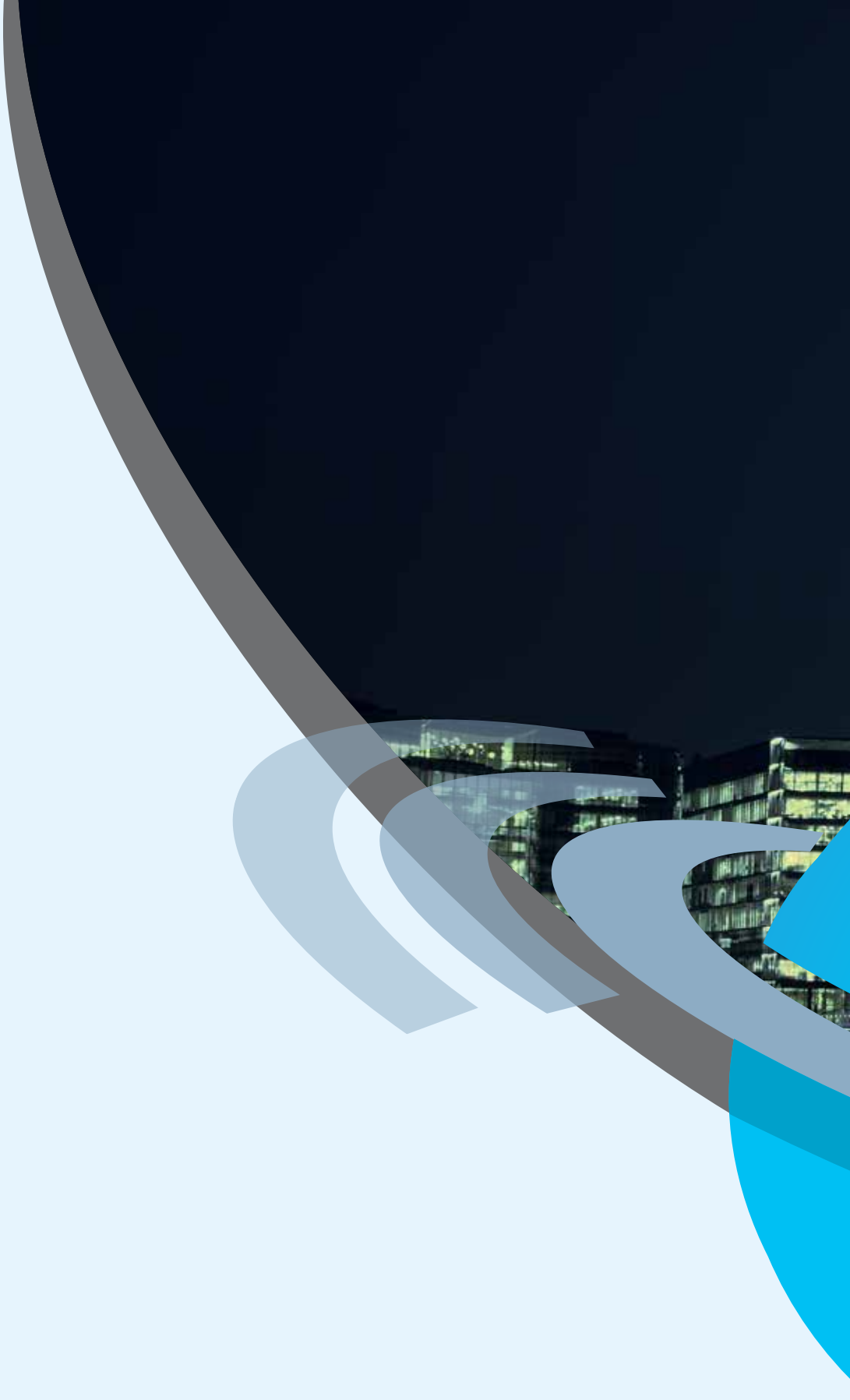
Part Numbers	Hydrosense ID Detection Components
ID-WLDM	Hydrosense ID Addressable Interface Module - Two Detection Zones
ID-WLDP	Hydrosense ID Leak Detection Probe - 1m cable
HYDW-10	Hydrowire 10m (for use with both ID & HS)
HYDW-05	Hydrowire 5m (for use with both ID & HS)
ID-WLDM-EOL	Hydrowire ID End of Line Device
ID-WLMRC	Hydrosense ID Addressable Mains Relay Controller
ID-SIO-16	Serial I/O module - 16 channel input/output
ID-SIO-8SR	Serial I/O module - 8 way relay
ID-SIO-4S	Serial I/O module - 4 way monitored input controller

Part Numbers	Conventional Hydrosense HS Panels
HSCP-S-2-230	Hydrosense HS Conventional Leak Detection Panel (2 Zones)
HSCP-S-4-230	Hydrosense HS Conventional Leak Detection Panel (4 Zones)
HSCP-S-8-230	Hydrosense HS Conventional Leak Detection Panel (8 Zones)
HSCP-S-2-AP-230	Hydrosense HS Conventional Leak Detection Panel (2 Zones) c/w Ancillary PCB
HSCP-S-4-AP-230	Hydrosense HS Conventional Leak Detection Panel (4 Zones) c/w Ancillary PCB
HSCP-S-8-AP-230	Hydrosense HS Conventional Leak Detection Panel (8 Zones) c/w Ancillary PCB
HSCP-S-2-110	Hydrosense HS Conventional Leak Detection Panel (2 Zones) 110V
HSCP-S-4-110	Hydrosense HS Conventional Leak Detection Panel (4 Zones) 110V
HSCP-S-8-110	Hydrosense HS Conventional Leak Detection Panel (8 Zones) 110V
HSCP-S-2-AP-110	Hydrosense HS Conventional Leak Detection Panel (2 Zones) 110V c/w Anc. PCB
HSCP-S-4-AP-110	Hydrosense HS Conventional Leak Detection Panel (4 Zones) 110V c/w Anc. PCB
HSCP-S-8-AP-110	Hydrosense HS Conventional Leak Detection Panel (8 Zones) 110V c/w Anc. PCB
HSRP-S-2-230	Hydrosense HS Conventional Repeater panel (2 zone) 230 VAC
HSRP-S-4-230	Hydrosense HS Conventional Repeater panel (4 zone) 230 VAC
HSRP-S-8-230	Hydrosense HS Conventional Repeater panel (8 zone) 230 VAC
HSRP-S-2-24	Hydrosense HS Conventional Repeater panel (2 zone) 24 V
HSRP-S-4-24	Hydrosense HS Conventional Repeater panel (4 zone) 24 V
HSRP-S-8-24	Hydrosense HS Conventional Repeater panel (8 zone) 24 V

Part Numbers	Hydrosense HS Detection Components
HS-WLDP	Hydrosense HS Leak Detection Probe
HS-WLJB	Hydrosense HS Conventional Leak Detection Probe Junction Box
HYDW-10	Hydrowire 10m (for use with both ID & HS)
HYDW-05	Hydrowire 5m (for use with both ID & HS)
HS-HWCI	Hydrosense HS Conventional Hydrowire Connection Interface
HS-HWCI-EOL	Hydrowire HS End of Line Device
HY-WLRI-F	Hydrosense Conventional Remote Indicator
SY-BS01	Hydrosense Manual Alarm Call Point (Blue, Surface Mount)
SY-BF01	Hydrosense Manual Alarm Call Point (Blue, Flush Mount)
HY-WLRI-S	Hydrosense Conventional Remote Indicator c/w surface box
HSCP-AP	Ancillary PCB for Hydrosense HS Control Panels
HSCP-Bezel	Bezel for Semi-Flushing HSCP Panel to Wall
VMIS-W	Secure Mains Isolator Switch for Control Panels - White

Part Numbers	Components for use in both Hydrosense ID and HS Systems
HY-WLDP-H	Hydrosense Probe Universal Mounting Clip (for use with both ID & HS)
HY-WLDP-C	Protection cage for Hydrosense probe
HY-FXSA	Fixing Clips for Leader and Hydrowire Cable - Screw or Adhesive Fix (Pack of 100)
HY-ZB01	Zone Breaker / Extension lead 1m
HY-ZB03	Zone Breaker / Extension lead 3m
HY-ZB10	Zone Breaker / Extension lead 10m
HSVS	"Water Leakage Alarm Activated" - 'Hydrovoice' Voice Sounder
HY-WLSMC	Short Message Communicator for Remote Indication of Alarm via GPRS
HSSB1	Sounder / Beacon (White Sounder Blue Beacon)

Part Numbers	Ancilliary Equipment
E-NP2.3	Sealed Lead Acid, 12 Vdc, 2.1Ah
E-NP7.0	Sealed Lead Acid, 12 Vdc, 7.0Ah
K2111	Leader Cable (50m), Twin PVC/PVC, 0.75mm Round 3A



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DS/HYD-BRO/ISS-2

We reserve the right to change or amend any design or specification in line with our policy of contunuing development and improvement.