Floodline Leak Detection

ANDEL
The Company and The Products

Andel Ltd was formed in 1992 by a nucleus of experts with years of hands-on experience in the design and development of leak detection systems.

As the recognised market leader, Andel has accumulated a substantial resource of technical expertise and practical know-how. It offers a comprehensive package of "one-stop" customer support - from initial site survey through equipment selection, system design, installation and full service back-up for any size of project.

From total commitment to service, product development, quality and pricing, Andel has emerged as one of the largest and most respected suppliers of specialised leak detection systems throughout the world.

The Andel "**FLOODLINE**" range covers all possible requirements, from stand-alone single zone modules and units for the smaller installation, to comprehensive multi-zone systems with the capacity to handle the largest building.

FLOODLINE leak detection systems offer outstanding flexibility, with a range of equipment and sensors to tailor each installation to the client's exact needs.

FLOODLINE systems provide unrivalled value, reliability and are simple to install, easy to use and, above all, dependable.

FLOODLINE systems are installed in:-

Computer Rooms; IT, Telecommunications and Switch Centres
Operations Rooms
Dealing Rooms
Banks
Leisure Facilities
Sports Centres
Hospitals
Government Departments and the MOD
TV and Radio Stations
Libraries
Archives
Art Galleries
Historic Buildings
Royal Palaces (Windsor, Buckingham Palace)

FM 512048
ISO 9001:2000

E&OE 06r01

Floodline Leak Detection

Leak Detection for Damage Limitation

The Dangers

Leaks can occur in any building and are among the most frequent causes of costly damage, disruption and loss. Modern fit-out methods and the reliance on complex mechanical and electrical systems not only increase the chances of a leak, but can also make the outcome worse. The first indication of a leaking pipe hidden within a floor void may be the failure of the power supply, disruption of the network or the interruption of communications or data. Air conditioning plant, chilled water and heating systems, toilets, kitchens, vending areas, service risers, plant rooms and storage tanks can all present a serious leak hazard. If allowed to continue unchecked a leak, however small, is like a ticking time bomb! If it can be defused in time a disaster can be avoided.

The Answer

Floodline Leak Detection systems installed in critical areas will allow early action to prevent damage, reduce disruption and limit loss.

Andel's Floodline range offers the most comprehensive selection of products and systems available with a first class reputation for quality, durability, reliability and economy.

Floodline Leak detection systems suit any application, any size, any budget.

Water - Oil - Chemicals
Industrial - Commercial
Institutional - Domestic

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Floodline Leak Detection

Awards presented to Andel

The following awards recognise our ongoing efforts in the advancement of leak detection products and systems. Specifically - research, innovation, engineering, product design and installation services. In addition to these Andel is proud to have been recognised for its work with disabled people, promoting equal employment opportunities and the environment.

1997:
Kirklees Business of the Month - winner
Kirklees Business of the Year - runner up

HM Queen Elizabeth II
Special medal recognising Andel's work in the restoration of Windsor Castle after the fire in 1992

1999:
Royal Academy of Engineering &
Teaching Company Directorate
"Engineering Excellence"

Department of Trade & Industry
"Champions of Electronics Design"

2000:
UK Design Council
"Millennium Product"
("Floodline 128" in top 1000 products of the millennium)

2001:
Queen's Award for Enterprise: Innovation

2002:
SMART R&D Award

2005:
First "leak detection company" to be accredited by CIBSE to provide CPD seminars

2006:
West Yorkshire Environmental Business Award - innovation

2007:
Best Environmental Business

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Floodline Leak Detection

Floodline One-Zone Control Panel

The Floodline One-Zone water leak detection control panel offers a low cost, stand-alone system where a small amount of detection is required. One or more Floodline sensors can be connected.

Output relays are provided for connection to remote alarm, BMS etc. LEDs provide clear and easy to understand status and alarm information.

Function:
Water/Liquid detection, Temperature, Humidity and Gas detection

Zone Capacity:
1

Power:
110/230 VAC, 50/60Hz mains operated, 23Watts

Construction:
Powder coated steel enclosure

Dimensions:
H200 x W225 x D70 mm

Fixing:
Wall/surface mounted (special mounting arrangements to order)

Monitoring:
LEAK - continuous water/liquid detection
SYSTEM FAULT - sensor or leader cable damage, failure or disconnection

Alarm Indicators:
Flashing LEDs for **LEAK** or **SYSTEM FAULT** (all alarms displayed separately and continuously until corrected and reset)
Audible alarm

Status Indicators:
Mains power supply

Controls:
Mute (buzzer silence) button
Reset

Outputs:
1. **LEAK**
   - DPCO relay (5A @ 230VAC)

2. **SYSTEM FAULT/Complete Power Fail**
   - DPCO relay (5A @ 230VAC)

All relays have "clean" volt-free contacts

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Floodline Leak Detection

Floodline Multi-Zone Control Panels

The Multi-Zone Control Panel operates the network of leak detection zones. A zone can be a single point or many metres long and the whole network is continuously monitored for leaks and continuity. Zones are electrically isolated from each other and individually displayed so the system can accept and report any number of simultaneous or consecutive zone alarms - **true multiple leak reporting** - an alarm in one zone has no affect on the normal monitoring of its neighbours or the rest of the system.

LEDs provide clear and easy to understand status and alarm information. Output relays are provided for connection to remote alarm, BMS etc. Leak detection is shown clearly as **LEAK**. Sensor or cable damage or failure is shown as **SYSTEM FAULT**.

Function:
Water/Liquid detection, Temperature, Humidity and Gas detection

Zone Capacity:
4, 8, 16, 32

Power:
110/230 VAC, 50/60Hz mains operated, 25Watts (32 zones 50watts), 12VDC internal + battery backup

Construction:
Powder coated steel enclosure

Dimensions:
H292 x W285 x D90 mm (4,8,16 zones)
H360 x W455 x D130 mm (32 zones)

Fixing:
Wall/Surface mounted (special mounting arrangements to order)

Monitoring:
LEAK - continuous water/liquid detection - each zone reports separately
SYSTEM FAULT - sensor or leader cable damage, failure or disconnection

Alarm Indicators:
Flashing LEDs for **LEAK** or **SYSTEM FAULT** (all alarms displayed separately and continuously until corrected and reset)
Audible alarm

Status Indicators:
Mains power supply, battery operation, internal 12VDC supply, low battery, alarm accept (mute)

Controls:
Mute (buzzer silence/alarm accept) button, security key-switch output disable/reset

Outputs:
1. **LEAK** in any zone - DPCO relay (5A @ 230VAC)
2. **SYSTEM FAULT** in any zone - SPCO relay (5A @ 230VAC)
3. **Complete power fail** - SPCO relay (5A @ 230VAC)
4. **LEAK** in each individual zone - SPCO relay - optional (1A @ 30VDC)

All relays have "clean" volt-free contacts

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Floodline Leak Detection

Floodline 128 Multi-Zone System

The 128 Multi-Zone System operates a network of leak detection cables and sensors up to a total of 128 zones. A zone can be a single point or many metres of detection cable and the whole network is continuously monitored for leaks and continuity. Zones are electrically isolated from each other and individually displayed so the system can accept and report any number of simultaneous or consecutive zone alarms. An alarm in one zone has no effect on the normal monitoring of its neighbours or the rest of the system.

The Floodline 128 Multi-Zone System consists of a control unit with full text display and a base unit for connection of the sensor network. The control unit provides clear and easy to understand status and alarm information.

Output relays are provided for connection to remote alarm, BMS etc. BMS connection can also be provided by RS232/RS485 communication. Leak detection is shown clearly as LEAK DETECTED. Sensor or cable damage or failure is shown as SHORT CIRCUIT or OPEN CIRCUIT.

Function:
Water/Liquid detection, Temperature, Humidity and Gas Detection

Zone Capacity:
32, 64, 96, 128

Power:
110/230 VAC 50/60Hz mains operated 160 Watts (max), 12 VDC internal + battery backup

Construction:
Base and control unit powder coated steel enclosure

Dimensions:
Base Unit: H555 x W490 x D160mm
Control Unit: H185 x W55 x D62mm

Fixing:
Wall/surface mounted (special mounting arrangements to order)

Monitoring:
LEAK - continuous water/liquid detection - each zone reports separately

SHORT/OPEN CIRCUIT - sensor or leader cable damage, failure or disconnection

Display (control unit) Disconnected - connection cable between control unit and base unit damaged or disconnected

Display (control unit) Communication Failure - control unit and base unit damaged or disconnected

Module Communication Failure - Internal communication between base unit motherboard and 32 zone module/comms module failure

Remote Disconnected - connection cable between base unit and optional Floodline Remote Alarm damaged or disconnected

Alarm Indicators:
Base Unit: Display (control unit) Disconnected, Display (control unit) Comms Failed
Control Unit: Flashing LED for alarm active plus 20x4 LCD for text description of alarms

Status Indicators:
Base Unit: Power On
Control Unit: 20x4 LCD gives text description of system status plus flashing LED for any alarm

Control:
Base Unit: None
Control Unit: Mute (silence alarm), security keyswitch (to access menu system), menu, up, down and enter (to operate menu and scroll through alarms)

Output:
1. Leak in any zone - SPCO Relay (5A @ 230VAC)
2. System Fault - open, short circuit any zone - SPCO Relay (5A @ 230VAC)
3. Mains Fail - SPCO Relay (5A @ 230VAC)
4. Complete Power Failure - SPCO Relay (5A @ 230VAC)
5. Self Test - Low battery, comms failure, remote/display disconnected - SPCO Relay (5A @ 230VAC)
6. Leak in each individual zone - SPCO Relay

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Floodline 128 Modbus RTU Slave CM-180-20

Developed in conjunction with the manufacturer Ultima, the CM-180-20 is designed to convert the communication protocol of the Floodline 128 system into standard modbus protocol.

The module installs in a separate enclosure near to the main box of the Floodline 128 system

Features:

ModBus RTU protocol
set the baud rate, parity and stop bits

2 communication ports COM1 - RS232 / RS485 and COM2 - RS232 / RS485

2.5kV electrical isolation between ports COM1 and COM2

RS485 port protection against power surges

wide range of power supply voltage of +10 V to +30 V DC normally supplied by Floodline 128 system

power protection against reverse polarity and over-voltage

Five LEDs indicate the status of the module

DRAFT Revision

bsi. ISO 9001 Quality Management
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E&OE 14r01

Floodline Leak Detection

Floodline Leak 1 Mk II

The Floodline Leak 1.MkII is a self-contained single zone leak detection module specially designed for incorporation into other control/ alarm systems, air conditioning units and BMS etc. The module can be used with all Floodline sensors.

The compact module is din-rail mounted and screw terminals provide connections for the leak sensors, power input and volt-free contact output.

Function:
Water/liquid detection

Zone Capacity:
1 Zone

Power:
Multi-Voltage 12 or 24v, AC or DC

Construction:
Housed within a polycarbonate enclosure.

Dimensions:
Length 100mm, width 75mm, depth 22.5mm

Fixing:
Din-rail mounted

Monitoring:
LEAK- continuous water/liquid
SYSTEM FAULT - sensor or leader cable damage, failure or disconnection

Alarm Indicators:
Flashing LEDs for LEAK or SYSTEM FAULT
All alarms displayed separately and continuously until corrected and reset if in manual mode

Status Indicators:
Power
Control
Auto/Manual Reset

Outputs:
Leak - system fault SPCO Relay 1Amp@24vdc

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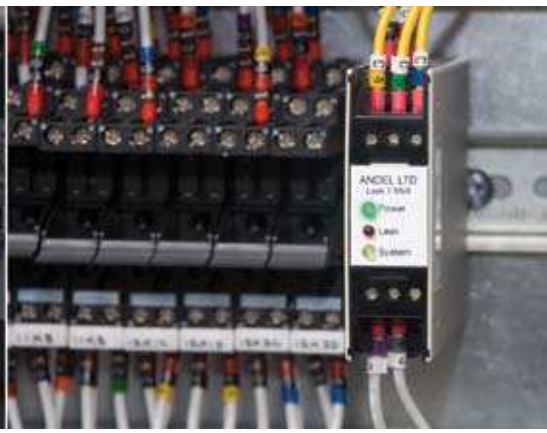
E&OE 06r01





Floodline Leak Detection

Floodline Groundhog Mk II

The Floodline Groundhog Mk II is a self-contained, single-zone leak detection system which can be mounted vertically or horizontally. It can be connected to any control/building management system that has the facility to accept volt-free contacts.

Additional Floodline Point Sensors or Leak Detection Tape can be slaved off the Groundhog.

Function:
Water/Liquid detection

Zone Capacity:
1

Power:
Multi-voltage operation 12 or 24V AC or DC at 0.8watts

Construction:
Built into a stainless steel Guard Plate which provides protection and assists fixing

Dimensions:
L130 x W90 x D37 mm

Fixing:
Fixed or free-standing on floor or in drip tray
Vertically at base of wall or plant

Monitoring:
LEAK - continuous water/liquid built-in sensor and aux sensor input
SYSTEM FAULT - aux sensor or Leader Cable damage, failure or disconnection

Alarm Indicator:
Flashing LEDs for LEAK and SYSTEM FAULT
All alarms displayed separately and continuously until corrected and reset if in manual mode

Status Indicator:
Power LED

Controls:
Manual/Auto reset select
Sensitivity setting

Outputs:
Leak/system fault - SPCO Relay
1Amp@24Vdc

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ISO 9001:2000

E&OE 06r01

Floodline Leak Detection

Floodline breeametar

BREEAM® "Major Leak Detection"

Wo2
Where evidence is provided to demonstrate that a water meter with a pulsed output will be installed on the mains supply to each unit.

Wo3
Where evidence is provided to demonstrate that a leak detection system is specified or installed to each unit.

For further information about BREEAM® visit their website at http://www.breeam.org/

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HUDDERSFIELD - FM512048

The BREEAM® (BRE Environmental Assessment Method for Buildings Around the World) assessment process was created in 1990 with the first two versions covering offices and homes. Versions are updated regularly in line with UK Building Regulations and different building versions have been created since its launch to assess various building types.

Credits are awarded according to the environmental impact of a building's development and use. The credits are added together to produce a single overall score. The building is then rated on a scale of "PASS, GOOD, VERY GOOD, EXCELLENT or OUTSTANDING" and a certificate is awarded to the development.

The Floodline breeameter system offers flow monitoring and water leak detection in line with the defined standards "W02" and "W03" and can aid in the accumulation of credits subject to a successful audit by an authorised assessor.

The Floodline breeameter uses 2 flow meters to actively monitor the mains water supply to premises. One flow meter is situated on the site boundary and the other within the premises after the stop cock.

The system monitors the pipe work between the external and internal flow meters for leaks and uses the flow rates and volumes from the internal flow meter to identify excessive water usage. The limits for these alarms are set by the user at the time of commissioning.

Output relays are provided for "mains power failure", "flow alarm", flow meter fault" and "complete power failure" .

Function:
Water leak detection or excessive water use

Power:
110/230 VAC 50/60Hz mains operated
51Watts (max)
Construction:
Powder coated steel enclosure

Dimensions:
H400 x W300 x D150 mm

Fixing:
Control panel: wall surface mounted
Flow meters: compression/flange fixing depending on size of meter

Monitoring:
External - Pipework
LEAK - continuous monitoring
FLOW METER FAULT - continuous monitoring

Internal - Premises
2 programmes; 7 day week or 5 day week plus weekends
Flow rate monitoring (user defineable)
Total flow for 24hour period

Status and Alarm Indicators:
The system uses a 4 x 12 LCD backlit display which displays real text messages in order of priority of Alarm/Message.
Audible buzzer alarm
All alarms displayed continuously until corrected and reset on the system

Controls:
Interactive push button system incorporated in the LCD display

Outputs:
1. Mains Fail - SPCO Relay (5A @ 250VAC)
2. Flow Alarm - SPCO (5A @ 250VAC)
3. Flow Meter Fault - SPCO (5A @ 250VAC)
4. Complete Power Failure - SPCO (5A @ 250VAC)

All relays are "clean" volt-free contacts.

E&OE r2.00

Andel-PPL

TankGuard RMS - Liquid Monitoring/Loss Alarm

Suitable for measuring both liquids and solid materials. It is suitable for use with the storage of diesel fuel, kerosene, gas oil types A2, C1, C2 and D as defined by BS 2869. It can be used with other liquids such as water and some chemicals but for suitability please check with the Andel Ltd.

Worried about abnormal use of stored liquids or maybe even potential theft? Andel's new TankGuard RMS makes the job simple for end users.

The system consists of:

- GSM/GPRS Modem & power supply
- Battery powered ultrasonic transmitter

The ultrasonic transmitter monitors the level of liquid inside the tank and relays this data via secure wireless connection to the receiving modem within a transmission range of 200m (line of sight). Each TankGuard RMS modem can synchronise with up to 6 transmitters for multi-tank sites. The data is then relayed via either analogue or GSMGPRS back to Andel's RMS (remote monitoring system). Customers will receive reports and alarm emails on:

- Automatically generated email alerts showing abnormal usage which could indicate theft or tank failure
- Current tank level
- DTE (Days To Empty) prediction
- Average usage history
- Automatically generated email alerts upon low level, high level

The TankGuard RMS is ideal for monitoring a range of liquids including heating oil, diesel, agricultural fuel oil, anti-freeze, biodiesel, bio heating oil, detergents, lubricants, waste oil and water.

The system can be retro-fitted to new and existing tanks (steel or plastic, single skinned or bunded) up to 3m in depth and in any configuration; Rectangular, square, cylindrical horizontol or vertical.

Specifications

Tank Depth Measurement:
Minimum 0.1m, Maximum 3m

Max Communication Distance:
200m in normal "line of sight" conditions between modem and transmitter

Power Supply:
Receiver: 150-250V, 50-60Hz
meets EN60355
Transmitter: 3 volt lithium cell CR2430

Wireless Communications:
433Mhz FM transmission EN300-220

Operating Temperatures:
Range from -10°C to +60°C

Not suitable for pressurised containers.
Use on tanks vented to atmosphere.

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E&OE r1.00

Floodline Leak Detection

Floodline Single Zone Detection Cable

For high sensitivity applications where a more basic, low cost system is required. The Single Zone Tape is a very strong, easy to install sensor. The sensor can be wetted and dried any number of times. The zones can be any length but the usual length is between 5 and 15m.

Applications:
In the voids below raised floors
Above suspended ceilings
Tie-wrapped to individual pipes
Run in drip trays
Laid around the base of an item of plant, apparatus or tank
Laid in loops or wave pattern for general monitoring of larger areas
No minimum or maximum length

Detection:
Activates with any conductive liquid anywhere along its entire length
Multiple re-use, dry and reset
Easy to replace or splice-in new length if damaged or hopelessly contaminated

Construction:
Polyester "woven" construction. No exposed conductors. Very high strength and abrasion resistance.

Dimensions:
20mm x 3mm thick. Supplied in any length either pre-connected at the factory or for cutting on site.

Fixing:
Fix to floor or other surfaces with flat ribbon type clips or self-adhesive clips or tie-wraps. Detection Tape is laid loosely with warning labels attached at regular intervals to warn of its function

System:
Connection can be made directly to any Floodline Control Panel/Unit or via Leader Cable

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ISO 9001:2000

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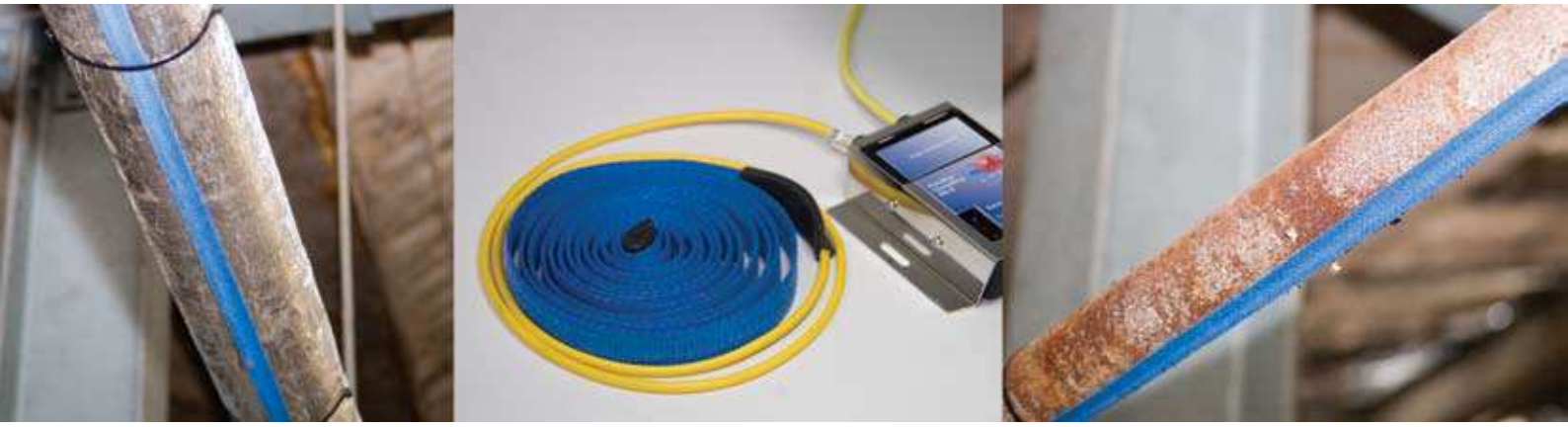

Floodline Leak Detection

Floodline Multi-4
4 Zone Detection Cable

Super Absorbent - High Sensitivity

Multi-4 - 4 Zone Detection Cable has been used for over ten years in areas where maximum leak detection sensitivity is essential.

Although superceded by Andel's more modern Multi-8 all-polymer detection cables for general usage, the highly absorbent Multi-4 cable is the best option where sensitvity to the smallest amount of water or condensation is required.

One length of Multi-4 - 4 Zone Detection Cable can provide up to four separately reporting zones. The zone changeover points along the cable are provided by the Floodline 4 Zone Junction boxes. The zones can be any length but the usual length is between 5 and 15m.

Multi-4 - 4 Zone Detection Cable incorporates a fine multi-filament cellulosic outer covering which acts just like a wick. Water is "sucked" into the inner detection cores allowing the system to react to the smallest drip. A special colour change system is built into the cable giving permanent evidence that the cable has been wet - and where - even after it has dried.

Applications:
Attach to the underside of the pipes (inside or outside the lagging)
Laid in drip-trays and catchment troughs
Fix to soffits and ceilings to detect water ingress

Detection:
Activates with any conductive liquid anywhere along the entire length of the detection cable. Once dry can be returned to use in most cases.

Construction:
Inner PVC core with cellulosic covered detection cores. Multi-filament cellulosic outer covering.

Dimensions:
Oval in shape, 4mm x 6mm

Fixing:
For fixing to floor or other surface. Use standard 6mm Tower Clip or self-adhesive clips, or fix to the underside of pipes with tie-wraps or tape inside or outside any lagging.

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Floodline Multi-8
8 Zone Detection Cable

The unique "Multi-Zone" construction of the Multi-8 - 8 Zone water sensitive cable allows up to eight separately reporting detection zones to be provided from one length of cable.

The zone changeover points along the cable are provided by either traditional Floodline 8-zone junction boxes or the Plug And Play system. The zones can be any length but the usual length is between 5 and 15metres.

The sensor can be wetted and dried any number of times provided the cable is not contaminated with a substance that permanently changes its electrical characteristics. If the contamination is soluble then the cable can be removed, washed (clean water only), dried and returned to use subject to the level of contamination.

Applications:
Below raised floors
Above suspended ceilings
Run in drip trays
Laid around the base of plant, apparatus or tank
Laid in loops or wave pattern for general monitoring of larger areas
Attached to pipework within lagging

Detection:
Activates with any conductive liquid anywhere along the entire length of the detection cable. Once dry can be returned to use

Construction:
A tough, all polymeric, low smoke and fume, zero halogen construction

Dimensions:
5mm Diameter

Fixing:
For fixing to floor or other surface, use standard 6mm tower clips, self-adhesive clips or tie-wraps. Detection cable is laid loosely with special Caution Tags attached at regular intervals to identify zone.

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Floodline Leak Detection

Floodline Multi-8r2
8 Zone Detection Cable

Low Smoke, Zero Halogen, Flame Retardent

The unique "Multi-Zone" construction of the Multi-8r2 - 8 Zone water sensitive cable allows up to eight separately reporting detection zones to be provided from one length of cable. Building on the success of our original Multi-8 cable, this revised version complies with more stringent fire, smoke and halogen tests.

The zone changeover points along the cable are provided by either traditional Floodline 8-zone junction boxes or the Plug And Play system. The zones can be any length but the usual length is between 5 and 15metres.

The sensor can be wetted and dried any number of times provided the cable is not contaminated with a substance that permanently changes its electrical characteristics. If the contamination is soluble then the cable can be removed, washed (clean water only), dried and returned to use subject to the level of contamination.

Standards tested and met:

EN 50267-1:1998
Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Part 1.

EN 50267-2-2:1998
Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Part 2-2.

EN 61034-1:2005
Measurement of smoke density of cables burning under defined conditions - Part 1.

EN 61034-2:2005
Measurement of smoke density of cables burning under defined conditions - Part 2.

EN 60332-1-1:2004
Tests on electric and optical fibre cables under fire conditions - Part 1-1: Test for vertical flame propagation for a single insulated wire or cable.

EN 60332-1-2:2004
Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame.

Applications:
Below raised floors
Above suspended ceilings
Run in drip trays
Laid around the base of plant, apparatus or tank
Laid in loops or wave pattern for general monitoring of larger areas
Attached to pipework within lagging

Detection:
Activates with any conductive liquid anywhere along the entire length of the detection cable. Once dry can be returned to use

Construction:
A tough, all polymeric, low smoke and fume, zero halogen construction

Dimensions:
5mm Diameter

Fixing:
For fixing to floor or other surface, use standard 6mm tower clips, self-adhesive clips or tie-wraps. Detection cable is laid loosely with special Caution Tags attached at regular intervals to identify zone.

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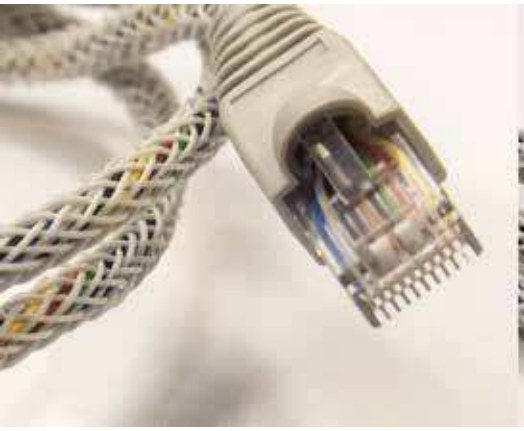

Floodline Leak Detection

Floodline Point Sensor

The Floodline Point Sensor is a compact sensor for vertical or horizontal mounting. Water touching its stainless steel probes activates the alarm. Used with the stainless steel Floodline Guard Plate to give heavy duty physical protection and assist fixing and adjustment.

The Point Sensor is used where Detection Cable could be damaged or where some damp, minor wetting or spillage is expected or of little concern. The sensor can be connected in any number and/or combination with other Floodline sensors.

Applications:
Plant rooms
Solid floor area
Basement/tunnels

Detection:
Activates when any conductive liquid makes contact across the probes
Multiple re-use
Instant return to use after water is cleared up

Construction:
High density plastic body, stainless steel/nickel plated brass probes
Heavy duty, stainless steel Guard Plate
Encapsulation option for immersion proofing

Dimensions:
Sensor: H71mm x W44mm x D25mm
Guard Plate: H110mm x W105mm x D30mm

Fixing:
Base of wall or apparatus. Floor - free standing or fixed
Tank/Sump etc. - requires special bracket plus immersion proofing

System:
Connected in any number and/or combination with other Floodline sensors

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Floodline Oil Sensor

The Floodline Oil Sensor can be included as part of a larger water leak detection system or one or more can be used to provide a dedicated oil leak alarm system. Oil Sensors are connected to a standard Floodline Control Panel giving visual and audible alarm features in addition to the facility for onward, remote, communications to BMS etc.

Applications:
Internal oil tanks
Plant rooms
Pump sets
Backup generators

Detection:
Activates with oil (or other liquid)
Multiple re-use
Instant return to use

Construction:
High density plastic body/sensor
Sealed against immersion
Heavy duty stainless steel guard

Dimensions:
Sensor: H71mm x W44mm x D25mm
Guard Plate: H110mm x W105mm x D30mm

Fixing:
Vertically at base of wall or apparatus using Guard Plate
Floor - free standing or fixed using Guard Plate/bracket
Tank/Sump etc requires special bracket

FM 512048
ISO 9001:2000

E&OE 06r01

Floodline Leak Detection

Floodline Flexi-Pad Sensor

The Flexi-Pad Sensors have been specifically designed for laying in narrow voids (too small for point sensors) or wrapped around pipes at valves or joints where leaks are more likely to occur. The Flexi-Pad Sensor can be used singly, or in groups with a number of sensors being connected together to form one zone.

A removable fabric cover assists absorption and protects the sensing surfaces. Flexi-Pad Sensors can be wetted and dried any number of times provided the sensor element/fabric cover is not contaminated with a substance that irrevocably changes its electrical characteristics. Examples may be vending machine syrup, chemical floor treatments, paints etc. After wetting, the cover can be replaced with a spare or removed for drying.

Applications:
Wrapped round pipes
Placed in drip trays under plant or equipment

Detection:
Activates with any conductive liquid. Once dry can be returned to use

Construction:
Tough, flexible plastic sheet with bonded "carbon loaded" detection tracks. Complete with removable fabric cover.

Fixing:
Lay loose, pin/glue at corners or tie-wrap loosely around pipe

Dimensions:
Sensor 400mm x 300mm x 1mm (16mm at connection point)
Envelope 430mm x 350mm x 1mm

Leader Cable:
Standard PVC/PVC 7/0.2 multi-core alarm/comms type cable or similar. LSF or other light cables can be substituted as required.
10m pre-fitted unless otherwise specified.

Bespoke Designs:
Andel Ltd can offer a custom design service. The Flexi-Pad Sensor's size, shape and base material can be tailored to the client's individual requirements.

Typical clients for this service are CLEAN ROOM EQUIPMENT MANUFACTURERS and PROCESS EQUIPMENT MANUFACTURERS.

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Floodline
Pipe-in-Pipe Sensor

The Floodline Pipe-in-Pipe Sensor is based around a Point Sensor but designed for fitting into a female threaded socket provided at strategic points in the outer pipe. Short stainless steel probes extend into the cavity, or annulus, created between the inner and outer pipes. When liquid escapes into the cavity and contacts a sensor the alarm is activated. Two types of device are available for water and oil (oil/any liquid).

Applications:
Double containment pipe or tanks
High level alarm in tanks

Detection:
Activates when any conductive liquid contacts the stainless steel probes or touches the tip (depending on the type of device used)
Multiple re-use
Instant return to use

Construction:
High density plastic body, stainless steel probes fully encapsulated
Resistant plastic tip (oil pipe-in-pipe)

Dimensions:
Length of body approx 70mm, diameter 30mm

Fixing:
½" BSP fitting as standard (other sizes available)

FM 512048
ISO 9001:2000

E&OE 06r01

Floodline Tundish/Overflow Sensor

The Floodline Tundish/Overflow sensor is designed to be attached to the overflow of a toilet cistern or other tank to provide an immediate automatic warning in the event of an overflow.

The sensor can be used singly, or in multiples, connected to any of the Floodline alarm panels. Each sensor can be allocated its own zone, or they can be installed in groups with a number of sensors attached together to form one zone.

The Tundish/Overflow sensor can be easily incorporated into a larger, more complex leak detection installation and it can be used along with any other Floodline detection device.

Tundish/Overflow sensors can be wetted and dried any number of times provided the sensor is not contaminated with a substance that irrevocably changes its electrical characteristics. Any soluble contamination can usually be removed by cleaning the sensor in warm water.

Applications:
Toilet cistern and tank overflows

Detection:
Activates with any conductive liquid, once dry can be returned to use.

Construction:
Tough plastic bowl and connection box with stainless steel sensor probes

Dimensions:
Bowl: 65mm diameter x 60mm height
Outflow: 20mm length
22mm internal diameter
25.5 external diameter
Prefitted leader to connection box: 90mm
Connection box: 80mm length
56mm width
24mm height

Fixing:
Fix to standard 22mm overflow pipe exiting the cistern/tank

FM 512048
ISO 9001:2000

E&OE 06r01

Floodline Leak Detection

Floodline Refrigerant Gas Sensor RGD1301

Gas detection:
R407c
R410A
R134a
R22

The Floodline RGD1301 Refrigerant Gas Sensor can be used as a stand-alone refrigerant alarm system OR be included as part of a larger water/oil leak detection system. It can also be used to provide a dedicated refrigerant gas detection alarm package.

The Floodline RGD1301 ensures companies comply with BS EN378 and detects refrigerant gases to HSE Occupational Exposure Limits.

BS EN378 specifies the installation of fixed refrigerant leak detectors in both existing and new systems of all sizes (with certain exceptions).

The Floodline RGD1301 sensors can be connected to a standard Floodline Control Panel giving additional audible and visual alarm features in addition to the facility for onward communication to BMS etc.

Applications:
VRV Air Conditioning systems
Refrigeration compressor packs
Machine/Plant Rooms
A/C Service Tunnels
Hotel Bedrooms
DX Split Units

Detection:
Constant monitoring of the area for any build up of chosen refrigerant gases above a preset level – When a leak above the preset levels is detected, audio/visual warnings are given.

Audible & visual alarms also at central Floodline Control Panel.

Construction:
ABS

Dimensions:
H: 90mm x W: 160mm x D: 50mm

Fixing:
Wall/surface mounted at suitable height based on occupancy of room being monitored & refrigerant gas being detected.

Operation:
The Floodline RGD1301 can be preset to different modes of operation :

Operational Modes:
Default Mode: In "Leak Alarm" a warning is given by pulsing the 85dB sounder and flashing the "Status LED" red. The integral relay energises, the system remains in alarm until gas concentration falls below the preset level and the reset button is pressed.

Sounder Disabled: As per **Default Mode** but local audible alarm is disabled.

Automatic Mode: As per default mode but system resets automatically once concentration falls below the preset level.

Specification:

Supply:	3Watts at 12VDC OR 230VAC
Relay Outputs:	SPCO (3Amps @ 230VAC)
Indicators:	3mm tri-colour LED
Sounder:	85dB piezo

FM 512048
ISO 9001:2008

E&OE 13r01

Floodline Leak Detection

Floodline Refrigerant Gas Sensor RGD1301m “mini”

Gas detection:
R407c
R410A
R134a
R22

DRAFT Revision

The Floodline RGD1301m Refrigerant Gas Sensor can be used as a stand-alone refrigerant alarm system OR be included as part of a larger water/oil leak detection system. It can also be used to provide a dedicated refrigerant gas detection alarm package.

The Floodline RGD1301m ensures companies comply with BS EN378 and detects refrigerant gases to HSE Occupational Exposure Limits.

BS EN378 specifies the installation of fixed refrigerant leak detectors in both existing and new systems of all sizes (with certain exceptions).

The Floodline RGD1301m sensors can be connected to a standard Floodline Control Panel giving additional audible and visual alarm features in addition to the facility for onward communication to BMS etc.

Applications:
VRV Air Conditioning systems
Refrigeration compressor packs
Machine/Plant Rooms
A/C Service Tunnels
Hotel Bedrooms
DX Split Units

Detection:
Constant monitoring of the area for any build up of chosen refrigerant gases above a preset level – When a leak above the preset levels is detected, audio/visual warnings are given.

Audible & visual alarms also at central Floodline Control Panel.

Construction:
Brushed chrome/metal 2 gang plate

Dimensions:
H: 89mm x W: 149mm
Protracting from wall: 3.5mm
Depth into wall: 30mm

Fixing:
Wall/surface or flush mounted at suitable height based on occupancy of room being monitored & refrigerant gas being detected.

Operation:
The Floodline RGD1301m can be preset to different modes of operation :

Operational Modes:
Default Mode: In “Leak Alarm” a warning is given by pulsing the 85dB sounder and flashing the “Status LED” red. The integral relay energises, the system remains in alarm until gas concentration falls below the preset level and the reset button is pressed.

Sounder Disabled: As per **Default Mode** but local audible alarm is disabled.

Automatic Mode: As per default mode but system resets automatically once concentration falls below the preset level.

Specification:

Supply:	3Watts at 12VDC
Relay Outputs:	SPCO (3Amps @ 230VAC)
Indicators:	3mm tri-colour LED
Sounder:	85dB piezo

bsi. ISO 9001 Quality Management
FM512048

E&OE 14r01

Floodline Leak Detection

Floodline DP01 Pipe-in-Pipe Liquid Sensor

Andel worked together with Durapipe, one of the world's largest double containment pipework manufacturers to develop the Andel - Floodline DP01 Pipe-in-Pipe Sensor for use in pipe-in-pipe systems, double contained tanks and other projects where interstitial monitoring is required.

Applications

The Andel - Floodline DP01 Pipe-in-Pipe Sensor is designed for use either as a stand-alone leak detection system which can be connected directly to a standard monitoring system OR can be interfaced either singly or in multiples with one of Andel's range of Floodline leak detection control panels.

Detection

The sensor uses infra-red to detect the presence of any liquid touching the sensor dome. When liquid is detected the relay within the local control unit will turn off and this is detected by either a monitoring system or a Floodline panel. The relay will also turn off if the sensor should become disconnected or if the power should fail.

The Sensor consists of two components; the sensor head and the control box.

The control box is the interface between either a central Floodline alarm panel or other monitoring system capable of monitoring volt-free contacts.

The sensor head is encapsulated and supplied in either a ½" or 1" BSP male threaded socket for fitting into the outer pipe at the lowest point or within a specially fitted 'catchpot'. The sensor is then connected to the local control box. Both the sensor and the control box are IP65 rated.

Function:
Water/Oil leak detection. Can be used with most liquids, call for confirmation.

Control construction:
IP65 rated polycarbonate enclosure in light grey (RAL 7035)

Control dimensions:
L120 x W80 x D55 mm

Control fixing:
Screw holes in enclosure back

Sensor construction:
IP65 rated, encapsulated uPVC in a mid/dark grey

Sensor Cable:
2m length

Sensor fixing:
Standard fitting ½" or 1" BSP male thread (please specify when ordering)

Power:

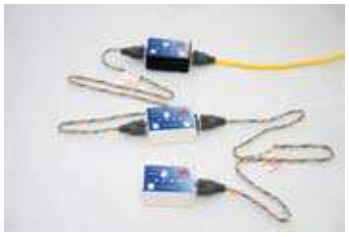
Supply Voltage:	9-30 Vdc
Supply current:	18mA (standby)
	7mA (when in alarm)

FM 512048
ISO 9001:2008

E&OE 11r01

Floodline Leak Detection

Floodline Plug & Play Auto-Connect



Andel's tried and tested Floodline multi-zone leak detection systems are well known for being the most reliable, effective and easy to use. The "Plug & Play Auto-Connect" system allows instant, foolproof connection for quick, no-hassle installation by any engineer, contractor or competent person.

Using a special version of the industry standard "RJ" type network connector, Floodline Plug & Play has universal acceptance. This robust, stable plug and socket system gives quick, easy, positive connection every time. Maintenance, replacement and modification couldn't be easier.

Multi-8 8 Zone Detection Cable and patch-leader cables are available in a range of standard pre-terminated lengths. Other non-standard lengths can be supplied at no extra surcharge. All cables can also be cut and connected on site by trained engineers.

Standard lengths: 5m, 7.5m, 10m, 15m

Couplers:
In/out couplers perform all connection and zone change functions. No setup or links to change. No wire stripping. No confusion.

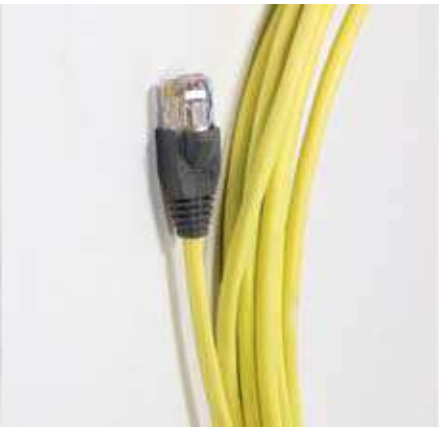
SOL - Start of Line
Connects Leader Cable to Detection Cable

Autocoupler
Connects one detection cable zone to another. In-built system logic automatically sets its relative position and zone address.

EOL - End of line
Terminates last zone in line

FM 512048
ISO 9001:2000

E&OE 06r01



Floodline Leak Detection

Floodline
Junction Boxes
Caution Tags
Leader Cable

Junction Boxes

Floodline Junction Boxes are an integral part of a Detection Cable/Tape system.

Three variations of the Junction Boxes are available:
1. One zone Junction Box for use with Single-Zone Tape
2. Four zone Junction Box for use with the "Multi-4" 4 Zone detection cable (screw terminal connections)
3. 8 Zone Junction Box for use with the "Multi-8" 8 Zone detection cable (IDC "KRONE" type terminal connections)

Function:
Connects Leader Cable to Detection Cable/Tape
End-of-line termination
Zone change along multi-zone cable string

Applications:
Install and connect on site
Zone identification assists and confirms leak location
Protective Guard Plate/mounting bracket available if required

Caution Tags

Floodline Caution Tags are an integral part of a Detection Cable/Tape system.

Function:
Warns of Detection Cable/Tape function
Confirms zone number

Applications:
Self adhesive wrap around Detection Cable/Tape

Leader Cable

Andel supply dedicated leader cabling.

Used for connecting Floodline Sensors to Floodline Alarm Panels. and for branching between detection areas on the same detection string.

Andel's purpose-made Leader Cable is all LSF0H construction for use in modern industrial/commercial environments. The core colours of the detection cable match the colours of the detection cable making installation simpler.

Standards tested and met:

EN 60332-3-10:2009
Tests on electric and optical fibre cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables.
EN 60332-3-25:2009
Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D.
EN 61034-1:2005
Measurement of smoke density of cables burning under defined conditions - Part 1.
EN 61034-2:2005
Measurement of smoke density of cables burning under defined conditions - Part 2.
EN 50267-1:1998
Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Part 1.
EN 50267-2-2:1998
Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Part 2-2: Procedures - Determination of degree of acidity of gases for materials by measuring pH and conductivity

FM 512048
ISO 9001:2000

E&OE 06r02

Floodline Leak Detection

Floodline Remote Alarm

The Floodline Remote Alarm unit provides a visual and audible warning of a leak or even a system fault.

The Remote Alarm is available as an industrial design in a surface-mounted ABS box or as flush-mounted brushed chrome version for areas which require the device to integrate into the decor. It can be mounted anywhere within the building and is connected back to the main Floodline Control Panel.

For example, the main control panel may be mounted in the security office but some form of repeat indicator is needed at the reception desk which is manned 24hrs.

Function:
Remote alarm alert of main control panel status

Power:
12VDC, 37mA fed from main panel

Construction:
ABS Plastic enclosure for internal use only or brushed chrome face plate for a 2-gang electrical socket.

Dimensions:
H85 x W142 x D57 mm (ABS version)
H88 x W148 mm (2-gang faceplate)

Fixing:
Wall/surface mounted

Alarm Indicators:
Flashing red LED for **LEAK** or **SYSTEM FAULT**
(all alarms displayed continuously until corrected and reset at main control panel)
Audible alarm

Controls:
Keyswitch mute (ABS version)
Push swith mute (2-gang faceplate)
Auto Reset - resets when main panel is reset

Other, non-standard remote alarm units can be supplied to specific requirement.

We can also provide other communication options including AUTODIALLERS and DIGITAL Communicators. We would be pleased to discuss your requirements.

FM 512048
ISO 9001:2000

E&OE 12r02

Floodline Leak Detection

Floodline SD2 Speech Dialler/SMS warning system

BT 21st Century Network ready

CTR21 Pan European Approved.

Manufactured to comply with R&TTE Directive.

The Floodline SD2 is an advanced warning system that can be connected to all of Andel's Floodline range of control panels and it puts configuration, control and response at the fingertips of authorised users.

Any combination of up to ten landline or mobile numbers can be stored to be contacted by voice or SMS text message should an event trigger the warning system. Text messages are sent through the landline and therefore no SIM card is required or any cellular network subscription.

For total flexibility the user can define the triggers, the message that's sent and the order in which the numbers are dialled.

Basic installation requires an analogue telephone line (or analogue extension through a PBX) and a link to the control panel from the SD2. The SD2 can then be configured in accordance with client's requirements. The SD2 is suitable for new Floodline installations and as a retro-fit to existing systems subject to free connections in the panel.

Other applications:
Boilers, freezers, vending machines, air conditioning units, fire alarms, intruder alarm panels

Monitoring/Notification:
1. Can be used independently to monitor any item that offers a switched negative or positive trigger
2. 128 event log with time and date
3. Internal temperature monitoring
4. Call or text assigned numbers with a message. Maximum 40 seconds audio, phrase length (A, B, C, D, 0) variable
5. Remote access through touch-tone phones
6. Integral loudspeaker and microphone allow two way communications to the site

Construction:
Plastic case

Fixing:
Screwed to the wall with 2 screws

Power:
10.5 - 14V DC supplied by Andel Floodline panel
Current 35mA (standby) 70mA (active)

Inputs/Outputs:
1. 4 trigger inputs and 4 trigger outputs offer remote notification of alarm event and notification if the event has been cleared or reset
2. Trigger inputs A, B, C, D +ve or -ve applied, max 24V
3. Control of 2 output relays used for switching on and off internal devices like lights or heating system

Configuration/Display:
Stand alone keypad with 32 character, LCD text display

Dimensions (W x H x D):
150 x 104 x 30mm

Weight:
282g

Environment:
-10°C to + 40°C

Humidity:
0 - 75% RH, non condensing

Telephone system:

REN value	0
Dialling method	LD or DTMF

FM 512048
ISO 9001:2008

E&OE 11r01

Floodline Leak Detection

Floodline Project Reference List

ANDEL
LEAK DETECTION SYSTEMS

Museums and Art Galleries

Tate Modern
Tate Britain
National Museum of Scotland
British Museum
Imperial War Museum
Manchester Museum

Heritage, Historic Buldings and Royal Palaces

Windsor Castle
St. James Palace
Marlborough House
Palace of Westminster
National Gallery

Communications & Computer Rooms

BT
Vodafone
Orange
O2
Cable & Wireless
NTL/Virgin Media
3 (Three)

Data Centres

Norwich Union
Barclays
ICM Group
British Aerospace
Prudential
Global Switch

Offices

GSK
HSBC
Bank of America
DVLA
Swiss Re
Environment Agency

Laboratories

Astra Zeneca
Veterinary Laboratories Agency
University of Liverpool
BASF
Pfizer

Miscellaneous

British Nuclear Group
Ministry of Defence
Scottish Parliament
University of Manchester
London Stock Exchange
Credit Swiss
Yorkshire Building Society
Centrica
Airbus
HBOS
Sadlers Wells Trust
Severn Trent Water
Land Rover
Royal Bank of Scotland
Round House Theatre
Unilever

Our client and end-user list reads like "Who's Who" and includes many of the worlds biggest "blue chip" companies. We work with most of the UK's best Consulting Engineers. If you would like specific, named references or general details of projects similar to yours please contact us.

E&OE 06r01

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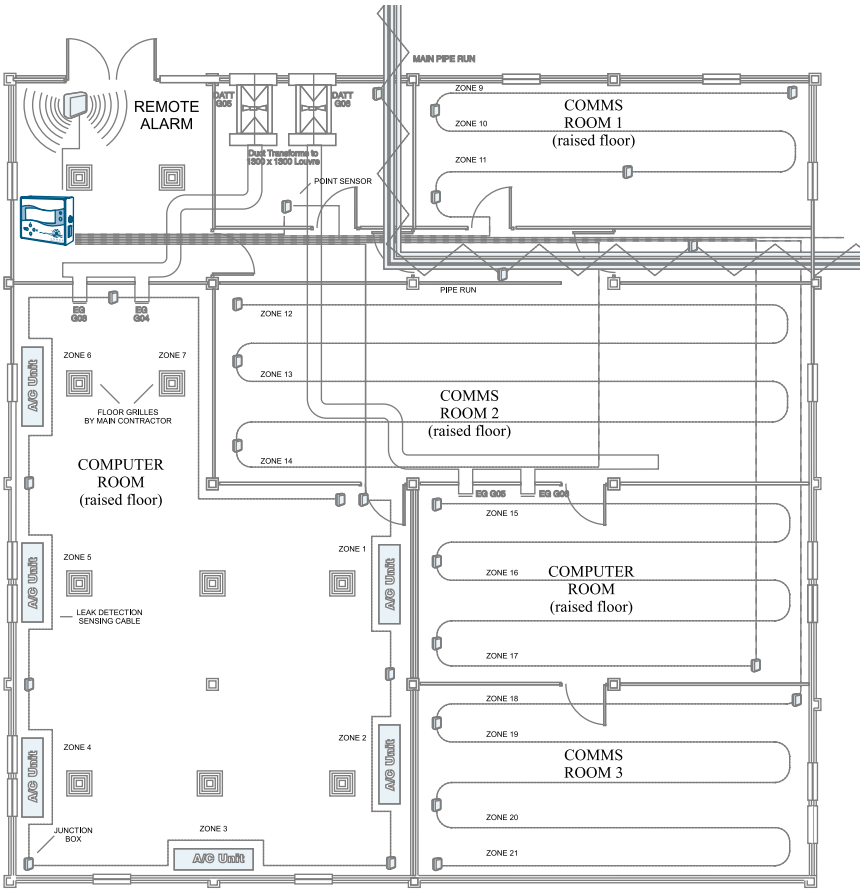
Floodline Leak Detection

Floodline
Leak Detection
Sample Zone Diagram



The diagram above demonstrates a simple example made up of various components from the FLOODLINE range of products.

A larger number of zones can be used where accuracy is important. Simple, single zones can be used when only a general alarm is required.

Where possible, e.g. the computer room, detection cable can be targeted at specific items such as the A/C units and supply pipes. In other areas regular patterns of detection cable will give general coverage.

Point sensors are used on solid floors where cable would be inappropriate.

Oil sensors monitor the standby generator room or storage tank bunds for oil leaks.

Overhead pipes can be protected by super-sensitive Multi-4 4 zone detection cable or Single Zone Tape.

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