

AquiTron

AT-APA Addressable Pinpoint Alarm Product & Design Guide



The highly-efficient leak detection alarm panel for use with TraceTek sensing cables and Aquitrone point sensors/probes

AT-APA Addressable Pinpoint Alarm

- Detects a leak at any point on the sensing cable or probe circuit
- 4 independent sensing circuits (4 zones)
- Pinpoint meterage location*
- Detects cable break faults
- 40 addressable regions
- 4 simultaneous leaks can be detected
- Touch-screen display
- Can monitor temperature and humidity with an additional sensor
- Modbus TCP/IP integration, SNMP traps and BACnet®
- Comprehensive event logging
- Built-in web server



* Leak accuracy is dependent on leakage value %

The AquiTron Addressable Pinpoint Alarm (AT-APA) is a highly efficient leak detection alarm panel for use with TraceTek sensing cables and AquiTron point sensors/probes.

Up to four hardwired separate leak detection channels (zones) can be connected to the panel.

Ten AT-PROBE-TS-M leak detection probes or up to 100 metres of leak detection cable can be connected to each zone. Each circuit can be sub-divided into as many as 10 regions (zones) and each region individually named.

This, along with multiple connection methods available for external equipment, make this a panel to fit almost any application.

The unit has been designed for all fluid leak detection applications where fast localisation of the leak, automatic alarm reports and remote monitoring of the data are important. All detailed information about the alarm is also sent by email and is also available to the building management system via Modbus TCP/IP and BACNet®. An SNMP trap is also sent in the case of a leak.

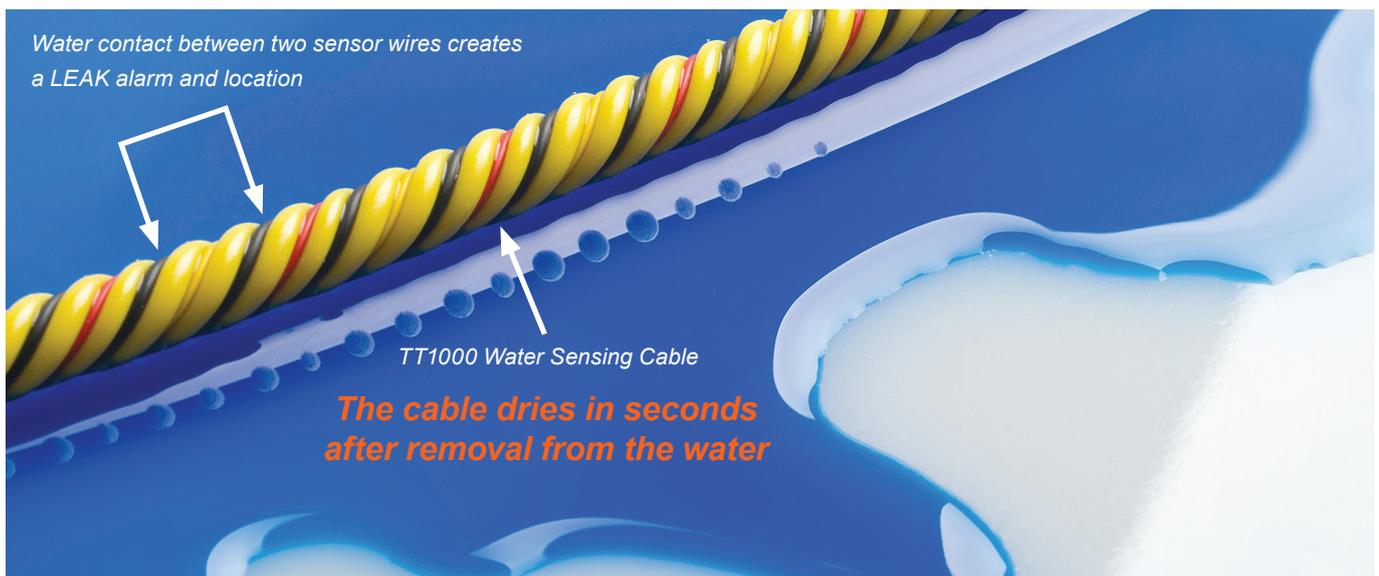
This module also contains the necessary volt-free relay contacts per channel for alarm reports. The operator can constantly monitor the status of the leak detection loops; this can be done on site on the touch screen and a computer via the built-in web server.

The AT-APA panel is accurate and easy to use, ideal for small and medium applications where accurate leak location is required.



How The Technology Works

Minimise downtime and a costly clean-up – pinpoint the leak fast



TraceTek sensing cable:

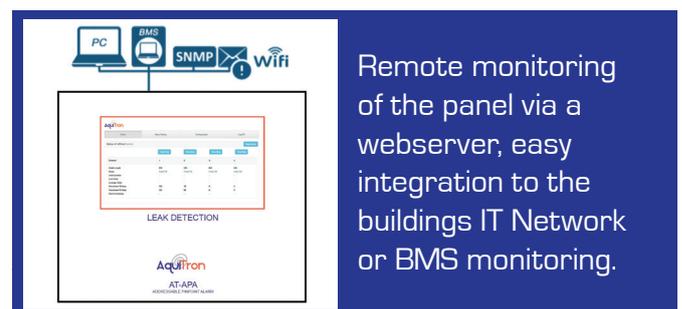
- Detects leaks at any point along its length
- Fluoropolymer construction that resists corrosion, chemicals, dust and dirt
- Supplied with factory-installed connectors and modular lengths for easy installation and modifications
- Allows for easy maintenance and troubleshooting with an ohm-meter or portable test box because of its simple circuit design
- Uniform sensitivity all along the sensing cable length

The AT-APA Alarm Panel:

- Offers simple touch screen instruction
- Ability to upload PDF drawings of the installation 'maps' for easy identification of the leak location
- Continuously monitors all four sensing circuits for fault condition 'cable break' and liquid spills
- Provides a clear display that differentiates leak alarms from cable break, sensing circuit continuity failure

AquiTron AT-APA Addressable Pinpoint Alarm panel combined with TraceTek water and fuel sensing cables provide a solution that, when a leak occurs, sounds an alarm and displays the exact distance to the leak; for example:

Leak 35 m – Leak Zone – Comms Room



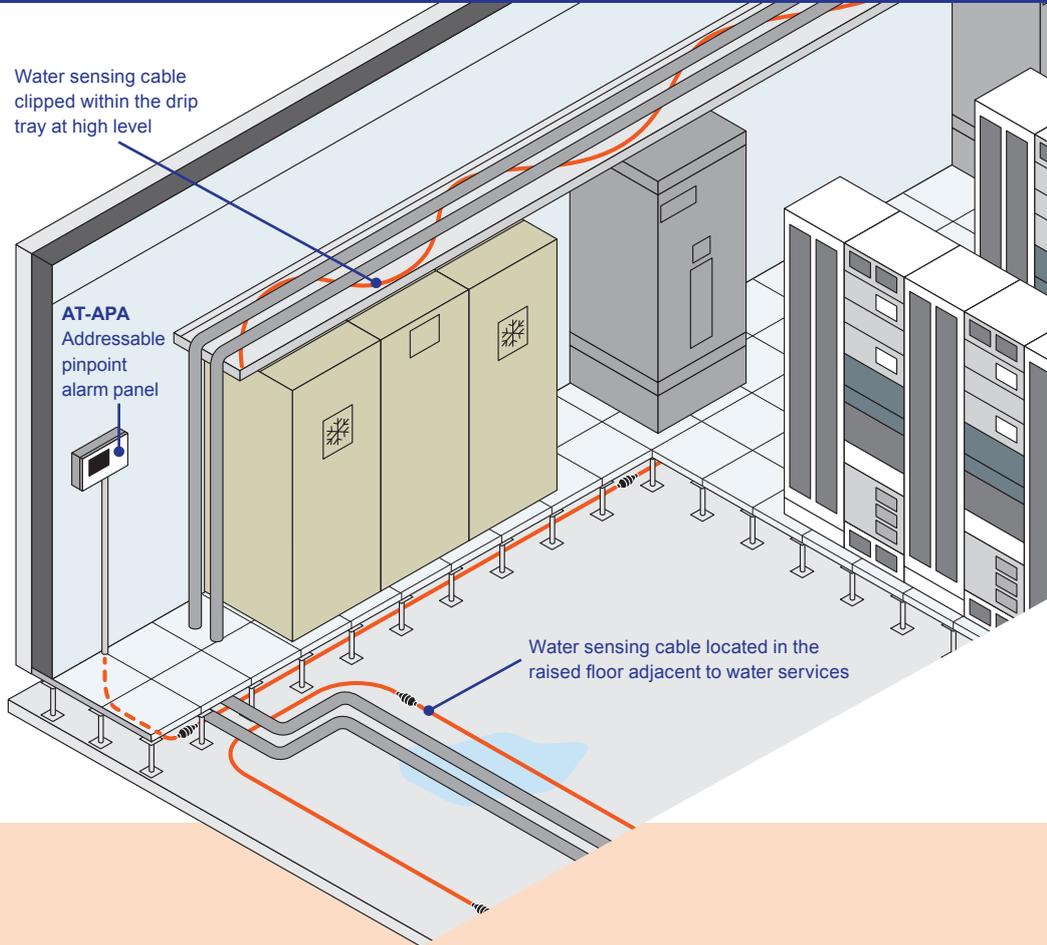
Typical Applications

Leak detection in data centre & server rooms

In data centre and server rooms an AquiTron leak detection system provides the best possible protection against leaks from air conditioning systems, cooling pipes or the ingress of water from adjacent rooms.

Very small leaks are detected with these systems before they can cause any major problems.

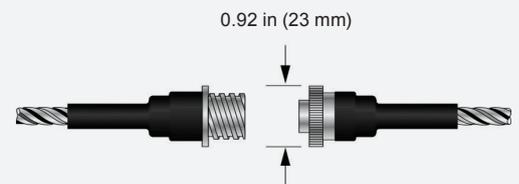
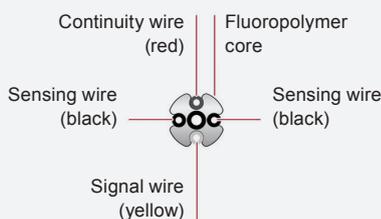
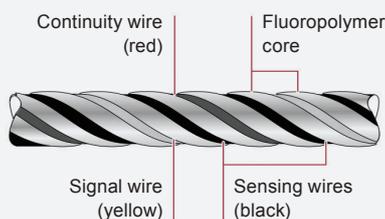
Two types of sensing cables (TT1000 and TT1100) are used in highly sensitive areas.



TT1000 water leak detection cable

TT1000 water sensing cable is installed under the raised access floor close to all the air conditioning units, chilled water and condensate pipework. The sensing cable can also be installed at high level within drip trays over critical pieces of equipment.

Technical specification: TT1000



Drawings not to scale

Typical Applications

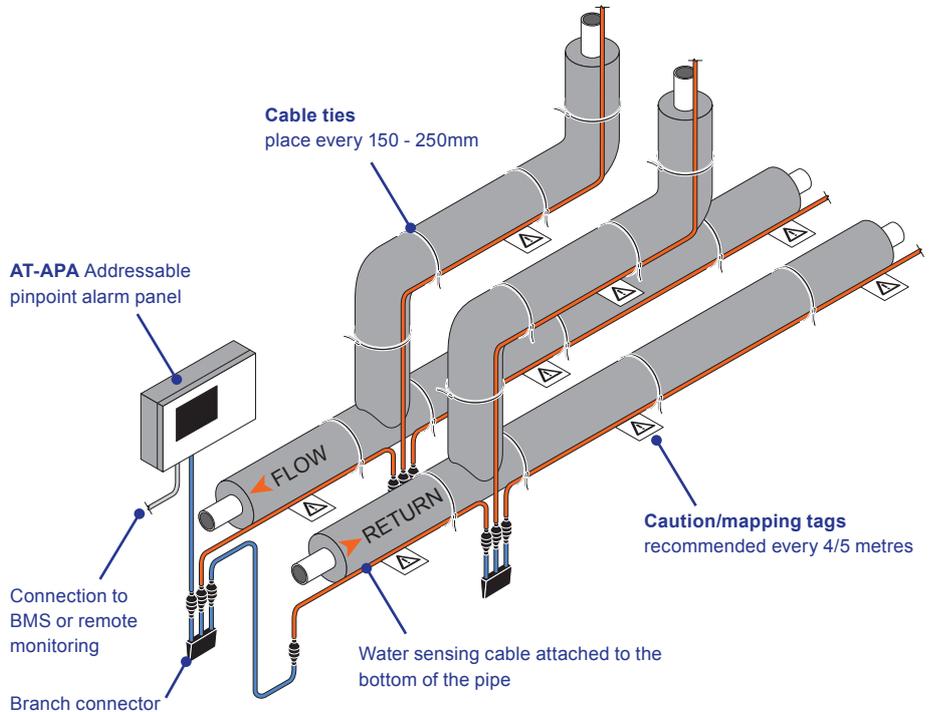
Leak detection on pipes

If pipes have to pass through critical areas or above expensive equipment they should be protected against water leaks.

Pipes installed in the ceiling can cause large amounts of damage if a leak occurs.

Fitting an AquiTron leak detection system will provide an early warning of a weeping valve, pipe fitting or connector before a flood occurs.

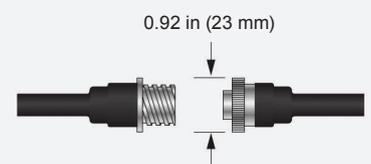
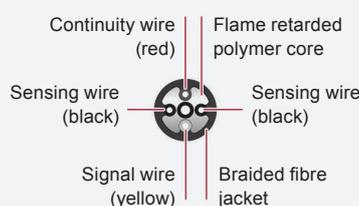
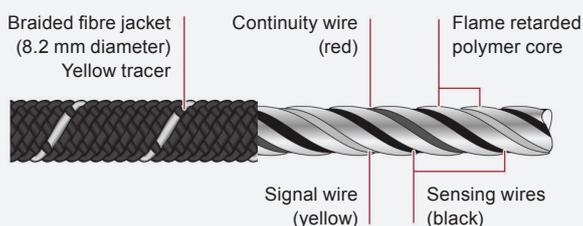
TT1100-OHP is a water sensing cable designed for overhead pipes or areas which are dirty and dusty.



TT1100-OHP water leak detection cable

TT1100-OHP is similar to TT1000. However it is supplied with a unique polyester over braid layer providing a wicking action that assures the first drops of water to hit the sensor cable are absorbed and wicked along the cable until an alarm signal is generated and the leak located. The rope layer also provides additional insulation where sharp metal edges could be a problem and works well to protect the sensor electrodes in dirty or dusty areas. The fibre is selected to be rapid drying so that once the leak is located and repaired, the cable will quickly dry and be ready for re-use. TT1100-OHP is a distributed sensor that can be attached to the bottom of suspended piping with cable ties. There is no need for a drip tray to bring water into contact with the sensor cable.

Technical specification: TT1100-OHP



Drawings not to scale

Typical Applications

Leak detection for fuels

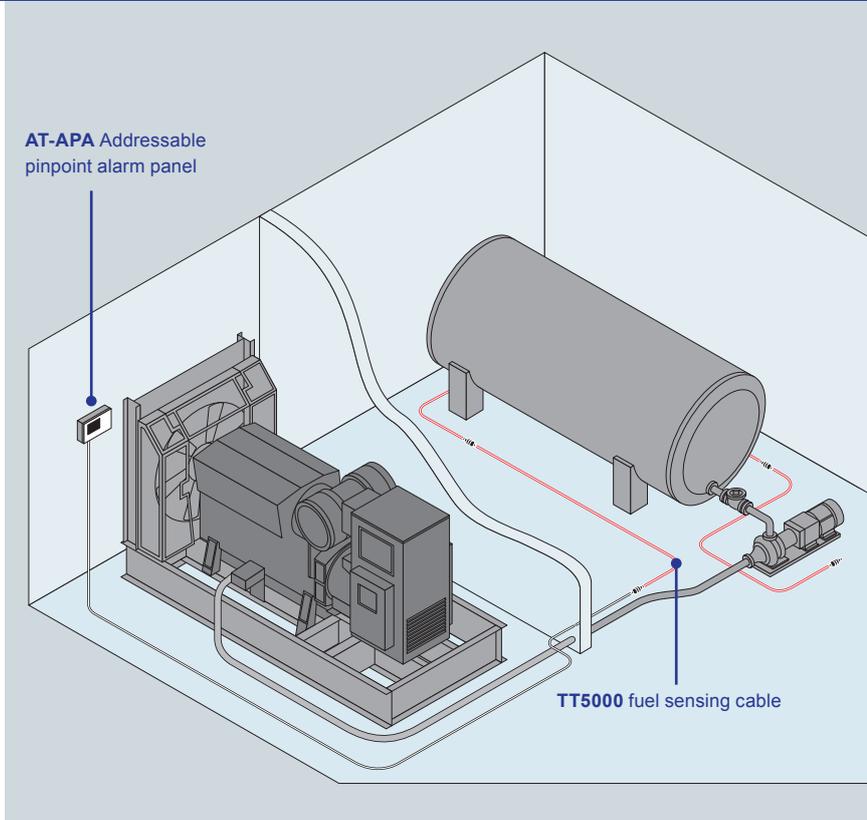
There are various methods for protecting fuel pipelines, generators and tanks against leaks.

TraceTek TT5000 series of sensing cables detects the presence of liquid hydrocarbon fuels at any point along its length, yet does not react to the presence of water. Installed with an AT-APA alarm panel, the cable senses the liquid, triggers an alarm and pin-points the location of the leak within one metre.*

The sensing cable can also be installed around the room perimeter or in critical areas such as under tanks, adjacent pumps, valves or pipe connections.

If you have pipes that run externally, there is a specific version for these applications. TT5000-HUV has an synthetic fibre braid designed to wick fuel and provide ultraviolet protection to the sensor. The TT5000 series can also be used in a hazardous area with zener barriers.

* Leak accuracy is dependent on leakage value %

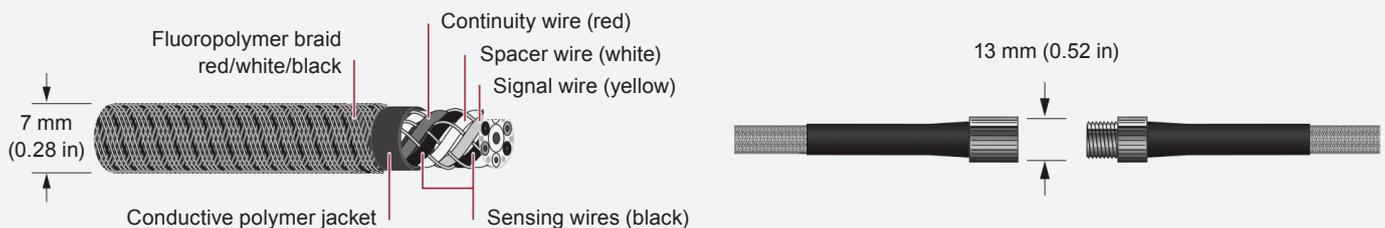


TT5000 fuel sensing cable

TT5000 is a fuel sensing cable that can detect and locate spills of gasoline, jet fuel, diesel, crude oil and similar hydrocarbon liquids. It will not detect or react to water.

The cable is available in outdoor (above ground), underground and indoor versions.

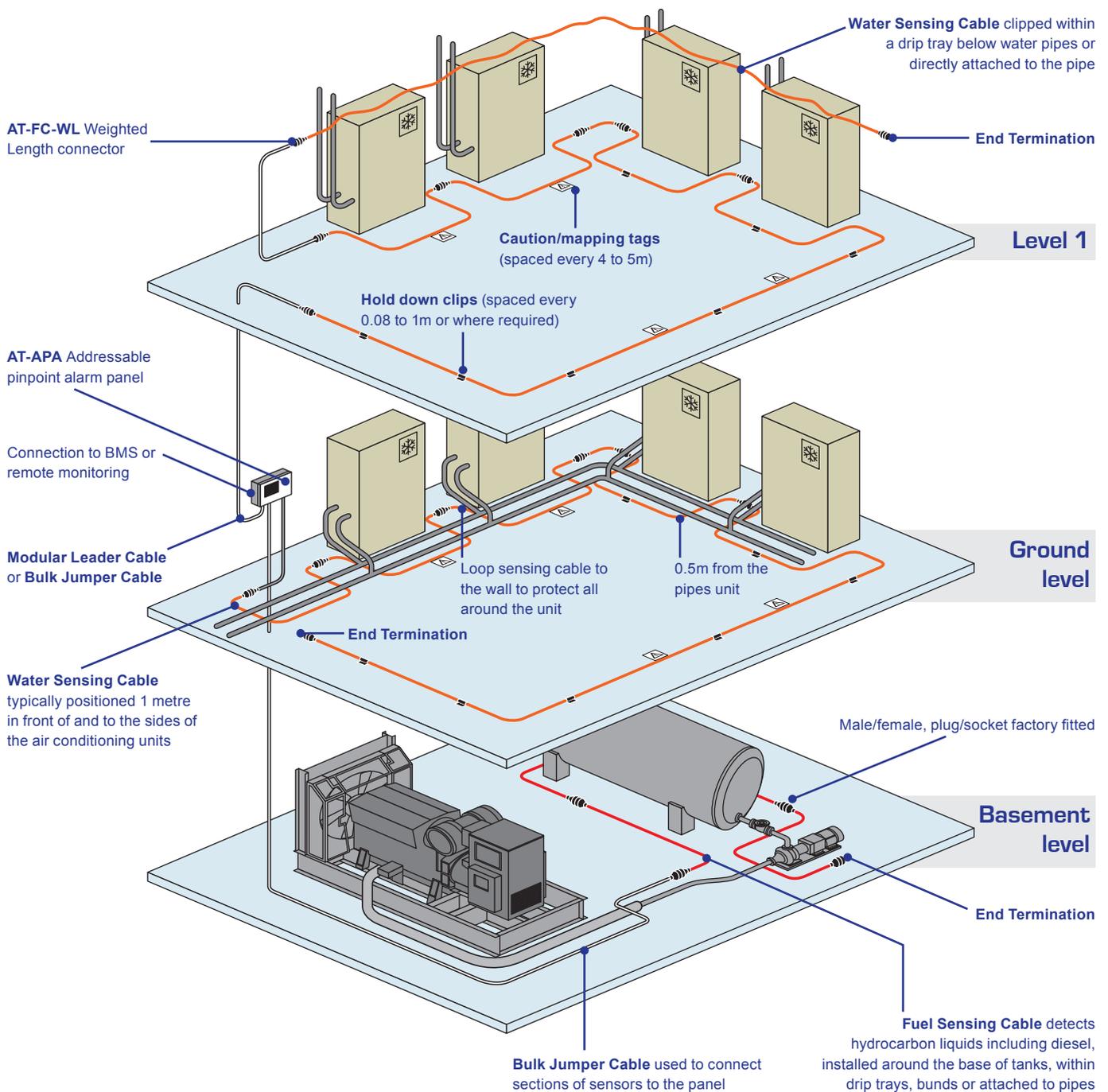
Technical specification: TT5000



Drawings not to scale

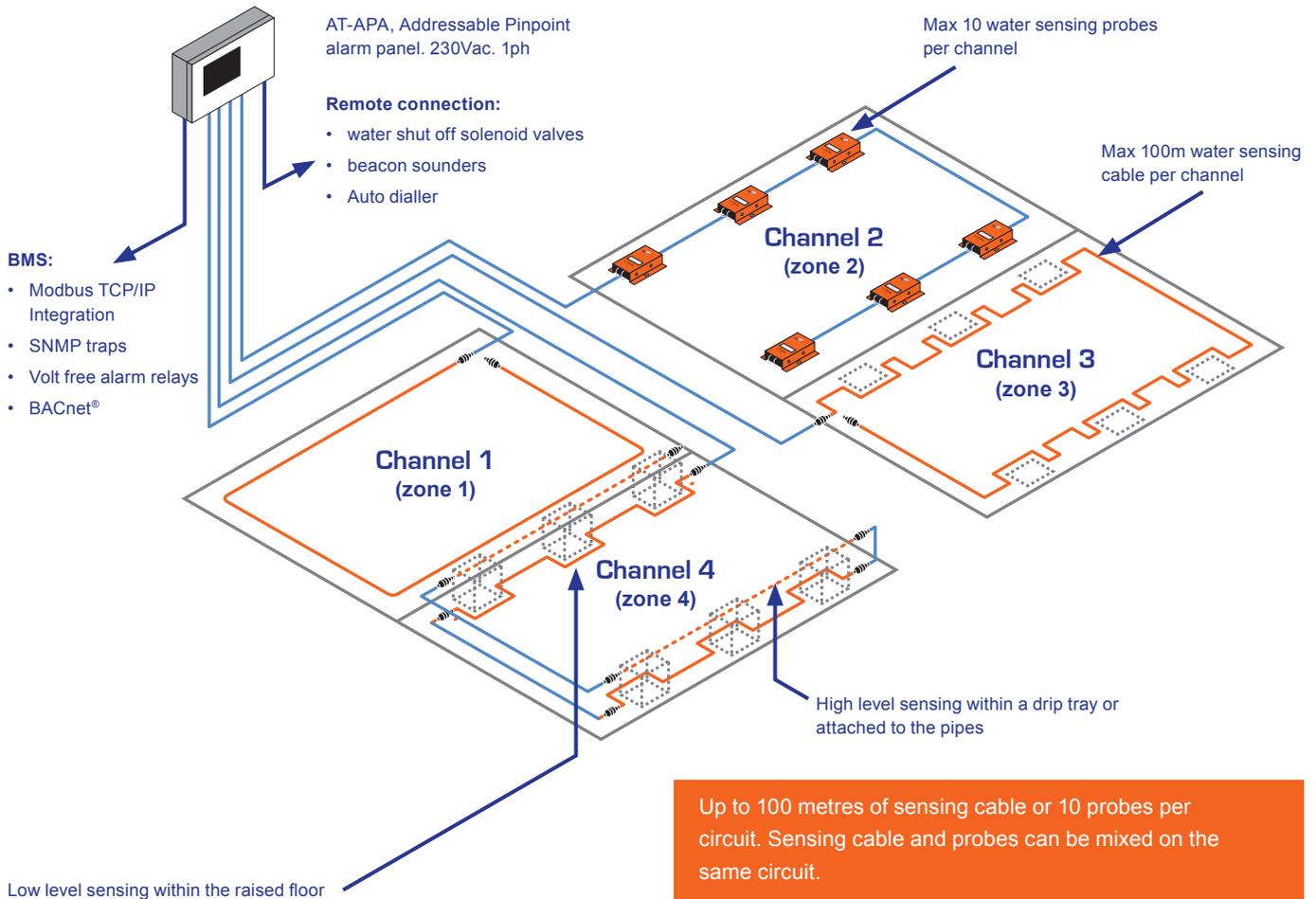
System Design Overview

- Addressable pinpoint panel used in this vertical design layout example to its full advantage.
- One panel can manage all four areas and report the leak to a single panel
- Volt-free alarm relays can be used to activate local remote alarm panels 'AT-RAP' within each area to provide visual and audible alarms.
- Up to 100 metres of sensing cable can be used on each of the 4 channels (zones) and mixed with water or optical floor sensing probes



System Design Overview

Up to 4 sensing zones, all individually monitored for leak location.



Area 1

Perimeter coverage commonly used to protect from equipment leaking around the perimeter or leaks entering from adjacent rooms

Area 2

Water sensing probes located below ACU's or within bunded areas or drip trays.

Area 3

Perimeter ACU protection when the chilled water or condensate pipe are located in front of the units

Area 4

Perimeter ACU protection when the chilled water or condensate pipe feed from above plus high-level sensing cable within a drip tray or attached to the pipes.

System Design Overview

The AT-APA alarm panel can be remotely located away from the areas been sensed i.e in a security, control or BMS room.

Sensing cables and probes can be mixed on the same sensing circuit.

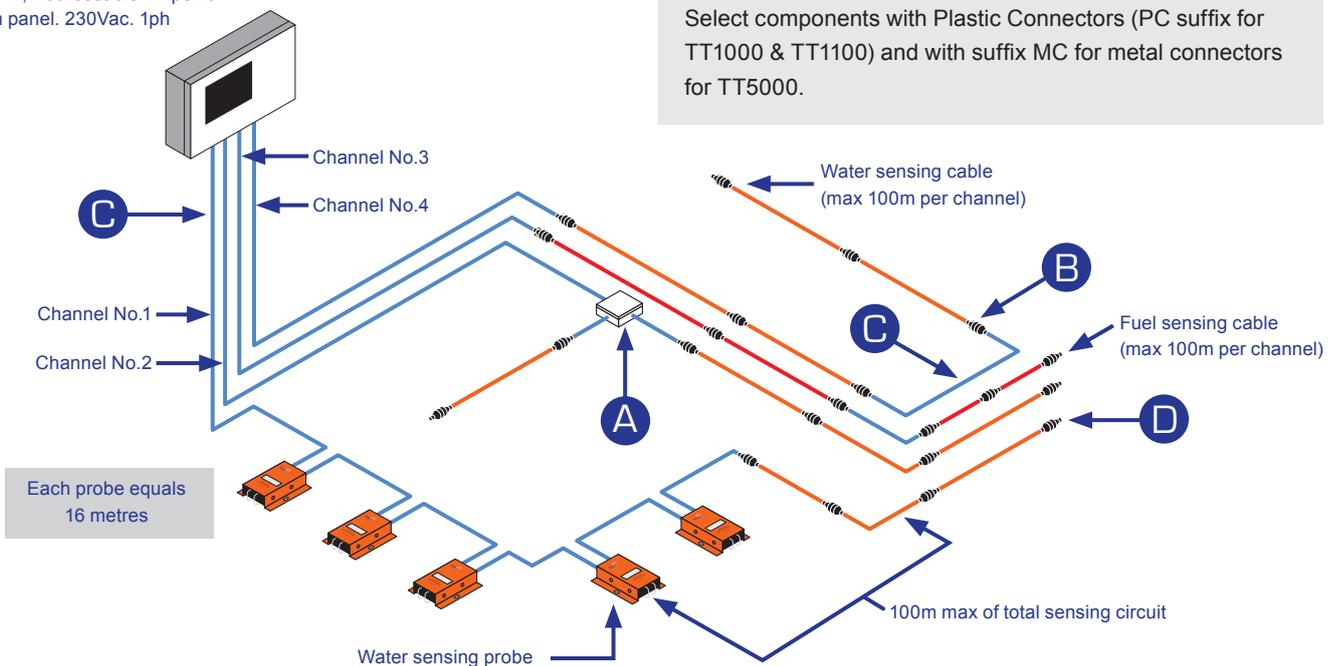
Note:

TT1000 water sensing cable, available in 1, 3, 5, 7.5, 15, 25 metres lengths. Modular jumper cable available in 1, 3, 5, 10, 15, 25 metres lengths.

Modular leader cables available in 5, 10, 15, 20, 25 metres lengths.

Select components with Plastic Connectors (PC suffix for TT1000 & TT1100) and with suffix MC for metal connectors for TT5000.

AT-APA, Addressable Pinpoint alarm panel. 230Vac. 1ph



Hold-down-clips, recommended fixing every 0.8 to 1m or change in cable direction. Caution/mapping tags recommended every 4/5 metres.

Point detectors – probes multiple types are available to detect water and water+fuels

- A** ▶ 'A' shows a Branch Connector in the sensing circuit. The branch connector is wired so the connected branch appears in series, middle leg first. The branch connector also adds a simulated cable length of 5 metres on each leg on each branch to make a clear division between areas or sections of sensing cable. The number of branch connectors is limited only by the total length of the sensing circuit.

- B** ▶ 'B' shows where the sensing circuit jumps to a new room or area and a weighted length is used. The weighted length simulates 5 metres of sensing cable so the 'System Map' will show clear divisions between the separate areas.

- C** ▶ 'C' shows a leader cable and jumper cables used at the start of the system leading away from the panel. They are also used between different sections of sensing cables. Max 500 metres per circuit.

- D** ▶ 'D' shows an end termination used at the end of each sensing cable circuit. When using the AT-PROBE-TS end of line loops need to be installed on the last probe.

Technical Ordering Information



Addressable Pinpoint Alarm panel
Four channel Addressable Pinpoint Alarm panel, 230Vac
AT-APA

SENSING CABLES AND PROBES

TT1000 Water Sensing Cable



Modular TT1000 water sensing cable lengths with factory installed connectors, pin type plastic connector at one end and socket type plastic connector at other end.

Standard lengths as shown below:

TT1000-1M/3FT-PC	TT1000-3M/10FT-PC	TT1000-5M/17FT-PC
TT1000-7.5M/25FT-PC	TT1000-15M/50FT-PC	TT1000-25M/76FT-PC

TT1100-OHP Water Sensing Cable



Modular TT1100-OHP water sensing cable lengths with factory installed connectors, pin type plastic connector at one end, and socket type plastic connector at other end. See TT1100-OHP Data Sheet for details. TT1100-OHP cable is ideally suited for overhead suspended pipe applications.

Standard lengths as shown below:

TT1100-OHP-1M-PC	TT1100-OHP-3M-PC	TT1100-OHP-7.5M-PC
TT1100-OHP-15M-PC	TT1100-OHP-30M-PC	TT1100-OHP-50M-PC
TT1100-OHP-100M-PC		

Bulk reels and connectors are also available

Water Sensing Probes



AT-PROBE-TS is a special purpose probe to detect water leaks in low spots, drip trays or sumps where sensing cables are inappropriate. The AT-PROBE-TS can be interconnected with jumper cable to other AT-PROBE-TS or sensing cable segments and can be monitored with an alarm module. Max 10 per channel.

AT-PROBE-TS	AT-PROBE-M
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TT5000 Fuel Sensing Cable



Modular TT5000 fuel sensing cable lengths with factory installed connectors, pin type metal connector at one end, and socket type metal connector at other end.

Standard lengths as shown below:

TT5000-0.3M/1FT-MC	TT5000-1.5M/5FT-MC	TT5000-3M/10FT-MC
TT5000-4.5M/15FT-MC	TT5000-7.5M/25FT-MC	TT5000-15M/50FT-MC
TT5000-30M/100FT-MC		

Bulk reels and connectors are also available

Power Supply Unit



Switch mode power supply using a regulated highly stable output (12Vdc) supplying full rated current to load and a universal mains voltage input range (90 to 264V ac). For use with AT-OPSEN, AT-RAP.

AT-PSU-12-1

Immersion probes



AT-600A is a screw-in water sensor to monitor overflow pipes for boilers, heating systems, unvented hot water cylinders, blow down pipes, drainage pipes and can be used in pipe-in-pipe, double containment tanks. Available in ¼" BSP and ½" BSP male threads. If multiple sensors are required an AT-BCB branch connector will be required for each sensor

AT-600A	AT-600B
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Drip Tray probe AT-DTP-BRK



The AT-DTP drip tray probe simply hooks over the side edge of a drip tray to detect a small level of water within. If multiple sensors are required an AT-BCB branch connector will be required for each sensor.

AT-DTP

Humidity & Temperature Sensor



Combined humidity and temperature sensor which can be directly connected and configured on the AT-APA panel.

AT-APA-HTS

Connects directly into the AT-APA panel and is supplied with a 5m lead

Technical Ordering Information

ACCESSORIES



Water shut Off Solenoid valves AT-V-NC

A range of 230Vac brass bodied WRAS approved (certified) N.1411048 pilot-operated diagram valves. Normally closed (fail safe) with manual release override. Suitable to shut off water supply following a leak alarm. Available in DN15 to DN54 (15mm to 54mm)

AT-V-NC-15	AT-V-NC-22	AT-V-NC-28
AT-V-NC-35	AT-V-NC-42	AT-V-NC-54



AT-RAP

The AT-RAP remote alarm panel interfaces to a main leak detection panel to provide an audible and visual alarm in an alternative part of the building such as the reception, security or outside the door of the main system. The AT-RAP incorporates a push button to mute. 12/24V ac/dc and 230Vac versions available. (see note A)

AT-RAP-12/24	AT-RAP-230
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SYSTEM COMPONENTS

Modular Jumper cable



Modular Jumper cable, (yellow), LSZH rated with plastic connector pre-fitted. Pin type male plastic connector at one end and socket type female plastic connector at other end. Available in 6 lengths. (See note A)

AT-MJC-3M	AT-MJC-5M	AT-MJC-10M
AT-MJC-15M	AT-MJC-25M	AT-MJC-30M

Bulk Jumper Cable



Jumper cable, (yellow), LSZH rated on bulk reels for directly connecting into the PROBE-TS or for connection to the modular sensing cable after fitting the necessary connectors. Male and female connectors with a 250mm tail are available separately and can be spliced on to the bulk jumper cable with a splice kit TT-JSK-HS18 (kit contains parts for 5 cable joints)

AT-BJC-50	AT-BJC-100	AT-BJC-200
AT-MC-250	AT-FC-250	TT-JSK-HS18

Modular Leader Cable



Modular Leader cable with plastic connectors (yellow), LSZH rated. One end prepared for terminal connection in alarm panel (or for splicing to bulk jumper cable) and other end prepared with socket type female plastic connector. Available in 6 lengths. (see note A)

AT-MLC-5-PC	AT-MLC-10-PC	AT-MLC-15-PC
AT-MLC-20-PC	AT-MLC-25-PC	AT-MLC-30-PC

Modular End Termination



Modular end termination with pin type male plastic connector. Required at end of sensing circuit and all branches. (see note A)

TT-MET-PC

Branch Connectors



Two types of branching connector are available; a junction box version AT-BCB which allows for bulk jumper cable or AT-MC/FC-250 male/female connector to be directly fitted. A modular connector version with pre-fitted leads and plastic connectors. (See note A)

AT-BCB	TT-MBC-PC
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Weighted Length



A weighted length is used to provide clear division between areas in a sensing circuit. The weighted length simulates 4.5m of sensing cable length. Two types are available: female version for inline splicing with bulk jumper cable or a pin type plastic connector at one end and a socket type plastic connector at other end. (See note A)

AT-FC-WL	TT-WL-4.5M/15FT-PC
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Hold-Down Clips & Caution Tags



Fixing clips to secure sensing cable and jumper cable to the floor, drip tray of flat surface. Supplied in bags of 50, 100 and 200.

Caution / mapping tags used to identify sensing cable segments and record mapped distance. Supplied in bags of 50 or as mixed kits with hold-down clips

TT-PTB-1000



Portable Test Box. Battery-operated device for testing TraceTek sensing cables. Allows testing of an individual length or up to 1000m of sensing cable. Useful for installation and maintenance of extensive systems. TT-PTB-1000 has plastic socket connector on flexible cord. Test box kit includes adaptors (plastic-to-metal and plastic-to-alligator clip) along with modular end terminations.

Note A: Metal connector versions with prefix 'mc' for TT5000 fuel sensing cable system

Note B: See individual product datasheets for further information



About Aquilar

Aquilar are a distributor and manufacturer of leak detection equipment providing solutions for detecting water, fuel, chemical and refrigerant gas leaks.

Aquilar Limited – providing world-leading systems for leak detection in critical industrial and commercial environments

Aquilar, founded in 2000, soon became the number one partner for the world leading TraceTek leak detection system, formally invented and manufactured by the Raychem Corporation.

Finding that one manufacturer did not offer a solution for all applications. Aquilar embarked on a customer focus program, speaking to many specifying engineers and customers to find out what other products were required. From this, development moved forward and a new range of brands were created including AquiWave, AquiTron, AquiNet and EcoLeak. R&D continues today with new products and solutions created to solve customers' challenges and to meet with new and changing standards within the building industry.

Aquilar prides itself on the level of service provided to its clients, offering step-by-step guidance, delivering the most effective solution for each project. A team of dedicated professionals can assist with design support, schematics, technical submittals, and quotations through to the delivery of the leak detection system along with product support required to complete the project to the highest standard.

Whilst Aquilar do not install leak detection directly, they do have a number of highly-trained partner installers around the country to ensure all systems are completed and maintained to the clients' specifications. Based in Broadbridge Heath, Horsham, West Sussex, Aquilar also benefits from ample warehouse space to keep good stock levels, providing off the shelf systems for the largest projects.

Aquilar has over 19 years' experience in design support and supplying leak detection systems into almost all market areas such as data centres, office buildings, banks, schools, hospitals, fuel storage facilities and laboratories. Aquilar have the right solution for all your leak detection needs.

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Can We Help You?

If you have a project that Aquilar can assist with, please call us on 01403 216100

