



# Water leak detection products



**Radiodetection**<sup>®</sup>  
AN SPX COMPANY

# Radiodetection's range of advanced water leak detection equipment for infrastructure professionals

Water conservation is a critical part in achieving environmental sustainability and preventing water leaks saves money, time and valuable resources. Radiodetection's next-generation water leak detectors, noise loggers and correlators are designed to help water industry professionals maintain this essential and valuable resource.



## Leak detectors

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Radiodetection offers utility contractors and companies a range of easy-to-use, affordable and portable water leak location systems. From the inexpensive RD546 analog listening stick to the latest handheld digital leak detectors, such as the RD545, Radiodetection has a leak detector for almost every scenario and environment.



## Noise loggers and level of service loggers

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Radiodetection's leak noise loggers offer utility contractors and companies the ability to monitor large water networks over time. The RD521 is a combined wireless transmitter and receiver system that can be deployed on valves, pipes, meters and other fittings. Each logger measures leakage noise and can store more than 240,000 measurements and transmit them to a mobile unit using wireless technology.

The RD522 Level of Service Logger is a specialized, ultra-long life pressure logger that is optimized for the water supply industry. With room for more than 240,000 measurements, PC and interoperability and a 10-year battery life, the RD522 is an essential Level of Service tool for delivery of critical water supplies to residences and industry.



## Leak noise correlator

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Radiodetection's leak noise correlator offers utility contractors and companies state of the art technology to detect leaks and trace pipe topography. Radiodetection's correlator analyzes audio frequencies within water pipes to detect the characteristic frequency caused by the presence of leaks. Information is displayed immediately and wirelessly on an easy-to-read LCD.



## Leak locator (tracer gas)

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Identifying water leaks early enables remedial action costs to be minimized. Radiodetection's RD560 can pinpoint tracer gas leaks in residential heating systems, water conduits and water pipes. Using hydrogen diffusion, the RD560 can alert the user to the presence of the smallest leak and help utility contractors and companies identify faults long before they become a danger.

# RD542 Handheld Leak Detector

## Customer side leakage detector

### Overview

The RD542 is a highly sensitive leak detector that can detect minute leaks in customer and supply side water networks. Its small size, light weight and optional backlit LED makes it ideal for use with water meters in difficult locations. The kit includes test rods which can extend the RD542's range into hard-to-reach or congested access cavities. A single button operates the unit and an intuitive LED meter provides immediate results. When the unit detects an anomaly, the operator can attach the included headphones to verify if the sound is the result of a leak.

### Features

- Handheld
- Level indicator
- Single-button operation
- All-round applications
- User-friendly control features
- Minimal training required
- Battery lifetime over 1000 measurements



### Kit includes

- Handheld unit
- Detachable testrods
- Batteries
- Carry case
- Optional: extension cables

### Specifications

- Dimensions: 220 x 35 x 23mm (8.6 x 1.3 x 0.9 inches)
- Weight: 310g (11 ounces)
- Power supply: 9V battery
- Battery lifetime: over 1000 measurements



# RD545 Acoustic Leak Detector

## Advanced electronic ground microphone

### Features

- Automatic level modulation
- 6 measurement frequencies/filters
- Integrated hearing protection
- Operating time greater than 12 hours
- Ambient light sensitive display
- Microprocessor controlled
- Piezoelectric microphones
- Minimum level indication
- Automatic data saving feature
- Switchable evaluation procedure

### Kit includes

- Central unit
- Ground microphone
- Test rod
- Headphones
- Tripod
- Case



### Overview

The RD545 is an advanced electronic ground microphone designed to amplify the noise generated by water escaping from underground supply pipes under pressure. Identifying the position of the loudest leak noise indicates the likely position of a leak. The system features a highly sensitive ground microphone that can detect even the smallest leaks. Measurements are saved to the central unit, allowing the operator to compare readings over time. The integrated Digital Signal processing provides 6 different analog signal filters that help to suppress unwanted noises. The LCD shows the last 6 measurements graphically and numerically. The unique adjust function automatically optimizes the indication sensitivity of the test rod. With simple one-button operation and a large display that automatically adjusts brightness, the RD545 is the ideal leak locator for a wide variety of domestic and industrial applications.





# RD546 Analog Listening Stick

## Leakage detection



### Features

- No inherent noise
- Not dependant on any power supply
- Shock-protected
- Corrosion resistant

### Overview

Even with today's sophisticated technology, mechanical measurement instruments offer unique and cost-effective advantages. Many situations do not require any sensitive electronics and it is often more practical to use the RD546, which does not require a power supply and does not have the inherent noise associated with electrical products.

The RD546 is made of high-quality materials. The vibration element inside consists of a bronze spring that is designed to transfer vibration via a resonator to the operator's ear. Stainless steel extensions, from 130 to 2000mm (5 to 78 inches), make the RD546 adaptable to any task. The RD546 is the ideal, low tech and cost-effective solution for detecting leaks in meters, pipes and other fittings.



# RD550 Water Pipe Locator

## Water pipe location made easy

### Features

- Suitable for all pipe materials such as PVC, PE, AZ, cast iron, steel etc.
- Zero electromagnetic disturbance
- Extremely high memory capacity for more than 240,000 measurements
- Low energy requirements
- Detection range up to 600m

### Overview

The RD550 water pipe locator is the ideal system to help the operator locate underground pipes and map water supply infrastructure. The RD550 can locate non-metallic pipes at depths of up to 2 meters (6.5 feet) below the surface. The RD550 kit consists of a handheld receiver and a transmitter.

When the system is mounted on a water pipe or hydrant, water pressure opens and closes the valve approximately 60 times a minute. The resulting pulsed pressure waves travel along the pipe and can be measured and saved by the receiver.



### Kit includes

- Pulse generator
- Carry case
- Charging unit
- Connection cable
- Headphones

### Specifications

- Minimum pressure requirements: 2 bar
- Power supply: Internal rechargeable battery in case
- Operating time: 12 hours
- Weight: 4.2kg
- Connection: 1-inch coupling
- Pulse frequency: 60 pulses per minute

# RD521 Noise Logging System

## Drive-by, wireless noise logging system

### Features

- Acoustic zone monitoring
- Rapid leak location from a mobile unit
- Multiple RD521s can be deployed across a large water network
- Reliable robust loggers with battery life up to 10 years
- Portable receiver can be vehicle-mounted to allow fast, efficient coverage of deployed transmitters
- Data is GPS and GIS compatible

### Overview

The RD521 wireless noise logging system sets a new benchmark for water infrastructure servicing. The system relies on any number of permanently installed noise loggers deployed across zones or District Metered Areas within a water supply network. The loggers detect and store noise generated by water leaks. Loggers can be installed at valves, hydrants, water meters and other fittings.

To retrieve this information, the operator can mount the receiver to a vehicle. The noise loggers will automatically send saved measurements wirelessly, where they will be recorded and analyzed by the drive-by receiver. Using this method, an operator can check between 220 and 350km (140 and 220 miles) of water pipes per day.

The RD521 can retrieve information from an unlimited number of loggers. Each logger saves and transmits measurements every 5 seconds for the duration of its 10-year battery life. This makes the RD521 the ideal choice for managing leaks in very large water supply networks.



### Specifications

#### RD521 Logger (Part No. RD521)

##### Data transfer rate:

Between 6am & 7pm: 12 times per minute  
Between 7pm & 6am: once per minute

##### Noise factors logged:

- Minimum level of the past two weeks
- Measurement quality (e.g. rain, wind etc.)
- Current Min/Max level
- Logger number
- Acoustic logger location

##### Operation time:

- 8 – 10 years battery life
- 5-year warranty

##### Measuring time:

**Selectable:** All day, 2am – 4am

##### Transmitter power:

**Power:** 10mW **Frequency:** 433Hz

**Environmental protection:** IP 68

**Sensor:** Piezoceramic

**Temperature range:** -15°C up to +55°C

**Dimensions:** 40 or 44mm height, 112mm with integrated antenna

**Weight:** approximately 0.45kg

**Material:** V2A plastics

#### RD521 Receiver (Part No. RD521R)

**Material:** Aluminum

##### Display:

- Topography
- Measurement quality
- Noise level
- Previous measurements
- Leakage status
- Current Min/Max level

##### Power Supply:

- Internal rechargeable battery
- External 12 volts DC

##### Interfaces:

- Printer/PC
- GPS optional
- External LCD

# RD522 Water Pressure Logger

## Battery powered level of service logger (LOSL)

### Features

- Solid watertight housing (no plug or connection sockets)
- Foil-protected keyboard for on-site programming
- Extremely high memory capacity for more than 240,000 measurements
- Error rate better than 0.1% of final value at 20°C
- Data transfer via infrared to USB
- 10-year battery life
- Suitable for deployment in critical water delivery areas to measure max/min demand



### Overview

The RD522 water pressure logger measures and stores pressure-related data and is optimized for the water supply and service industry. The RD522 saves up to 240,000 measurements in an accessible digital format and stores them to local non-volatile memory. The logger can be connected to a PC or to a GSM module via an infrared adapter. Measurement time can vary from several seconds to several months for long-term data acquisition. The RD522 water pressure logger is ideally suited to the following applications:

- Pressure monitoring in the water supply industry
- Pipe network calculations
- Fire hydrant checks
- Pressure check measurements

### Specifications

|                                   |  |
|-----------------------------------|--|
| <b>Pressure ranges:</b>           | From 0 up to 600mbar. From 0 up to 25 bar<br>Further pressure ranges up to 400 bars is possible            |
| <b>Temperature range:</b>         | Up to 70°C   |
| <b>Accuracy:</b>                  | Less than 0.1% of final value at 20°C  |
| <b>Resolution:</b>                | +/- 0.005% FS e.g. 0.5mbar at 10 bar   |
| <b>Measurement intervals:</b>     | 1 second up to 24 hours (selectable)   |
| <b>Real-time measurement:</b>     | Precise quartz clock measurement indicating the time and the date;<br>start of data acquisition selectable |
| <b>Memory capacity:</b>           | More than 240,000 measurements   |
| <b>Type of memory:</b>            | Non-volatile, buffered RAM. Measurements can be retrieved even after the battery is fully discharged       |
| <b>Interface:</b>                 | Infrared transmission to USB adapters  |
| <b>Display:</b>                   | LCD  |
| <b>Measurement cell:</b>          | Long-term piezo-resistive measurement cell, temperature compensated  |
| <b>Power supply:</b>              | Lithium battery 3.6V / 7.6AH, type AA; 10-year battery life (1-measurement per minute conditions)          |
| <b>Materials:</b>                 | Stainless steel / aluminum case with ventilation   |
| <b>Protected class:</b>           | IP 68  |
| <b>Pipe / hydrant connection:</b> | 1/2 inch standard thread or hydraulic clutch   |



# RD533 Leak Noise Correlator

Wireless, multi-function leak noise correlator

## Overview

The RD533 correlator is a multi-function system that is designed to detect leaks and trace the topography of water supply networks. When used with a transmitter, the RD533 can trace a pipe's route underground. The system features a highly sensitive ground microphone that can detect even minute leaks. The automatic frequency search function coupled with automatic and manual digital filtering allows the operator to locate leaks rapidly with minimal error.

The RD533 Leak Noise Correlator system is based around the use of at least two outstations which are deployed on suitable fittings surrounding an area of interest. The outstations feature extremely sensitive meters which detect and quantify leak noise and send it wirelessly to the Central Unit.

Measurements are saved to the central unit, allowing the operator to compare readings over time to establish the network's ongoing condition. With simple one-button operation and a display that automatically adjusts brightness, the RD533 leak noise correlator is the ideal leak detection device for a wide variety of industry applications.

## Features

- Portable
- Correlator/ground microphone/listening device in one compact system
- User-friendly control features
- Solid aluminum case
- 500mW transmitter (subject to regulatory approval)
- Charge or power direct from a vehicle (no adaptor required)
- Headphone jack in central unit and measuring boxes



Specifications overleaf

# RD533 Leak Noise Correlator

## Specifications

### Central Unit

|                           |   |
|---------------------------|---|
| <b>Resolution:</b>        | 0.2m                                    |
| <b>AFS function:</b>      | Automatic search for frequencies        |
| <b>Memory capacity:</b>   | 20 correlations                         |
| <b>Filters:</b>           | High-pass/low-pass 15 steps each        |
| <b>Operating time:</b>    | 14 hours                                |
| <b>Charging time:</b>     | 3 hours                                 |
| <b>LCD resolution:</b>    | 240 x 64 pixels                         |
| <b>Interfaces:</b>        | RS 232, DB-25 parallel port             |
| <b>Connections:</b>       | Sensor/hydrophone/antenna/headphones    |
| <b>Temperature range:</b> | -20°C to +60°C                          |
| <b>Dimensions:</b>        | 260 x 150 x 105mm (10.5 x 6 x 4 inches) |
| <b>Weight:</b>            | 2.5kg                                   |

### Outstations (Red & Blue)

|                                 |  |
|---------------------------------|--|
| <b>Display:</b>                 | Graphical/numerical                                  |
| <b>Displayed data:</b>          | Current level/minimum level,<br>battery charge level |
| <b>Radio frequency:</b>         | 433MHz   |
| <b>Transmitting power:</b>      | 500mW  |
| <b>Lighting:</b>                | Automatic  |
| <b>Operating/charging time:</b> | Approx. 9 hours/3 hours                              |
| <b>Dimensions:</b>              | 225 x 165 x 100mm (8.8 x 6.5 x 4 inches)             |
| <b>Weight:</b>                  | 2.9kg  |

### Sensors

|                     |                  |
|---------------------|------------------|
| <b>Standard:</b>    | Piezoceramic     |
| <b>Sensitivity:</b> | >1000pC/g        |
| <b>Mounting:</b>    | Permanent magnet |
| <b>Operating:</b>   | -20°C to +60°C   |

## Correlator

- Coherence display
- AFS function
- Measurement on sections with varying pipe materials
- High-measurement accuracy, even on plastic pipes
- Direct printing of measurement results; no PC required
- Software updates through RS 232

## Geophone

- Functions: search for pipes and burst pipes
- Displayed data: current/minimum/average value
- Adjust function: automatic sensitivity
- Automatic data saving process



# RD560 Leak Locator (tracer gas)

## Locate minute water leaks the easy way

### Overview

The RD560 Leak detector can detect and locate minute leaks in residential and industrial water supply pipes. A tracer gas containing 95% Nitrogen and 5% Hydrogen is injected into the pipe. This mix of tracer gas is used because it is non-toxic, non-corrosive, non combustible and can therefore be used safely in all environments. The hydrogen element of the tracer gas escapes through any hole in the wall of the pipe and permeates through whatever layer of surrounding soil, tarmac, concrete slab or paving is above it. This allows the RD560 to measure the quantity at the surface and pinpoint the leak.

Once a leak is located, the central unit will instantly notify the user of the leak's location and severity. Its compact, portable form and simple operation makes the RD560 the ideal leak locator for heating systems, water conduits, water pipes and district heating pipes.



### Features

- Works with any pipe material
- Locates leaks quickly and accurately
- User-friendly controls
- Modular design to help reduce maintenance costs
- Internal and external sensors available

### Kit includes

- Ground probe with water separator
- Space probe
- Bell probe
- Carry case
- Carry bag
- Battery recharger
- Vehicle battery recharger
- Ground pickup
- Ground probe with integrated sensors for faster response times

### Specifications

|                         |   |
|-------------------------|---|
| <b>Electronics:</b>     | Microprocessor controlled   |
| <b>Sensors:</b>         | Sensitive to 2 parts per million (PPM) of H <sub>2</sub>  |
| <b>Batteries:</b>       | Rechargeable NiMH batteries   |
| <b>Pump:</b>            | Rotary slide-valve pump   |
| <b>Alarm:</b>           | The acoustic and visual alarm provides critical information and warning when a leak is detected |
| <b>Alarm threshold:</b> | The alarm threshold can be individually set for each measurement range                          |
| <b>Reset:</b>           | Pressing reset sets the display for all measurement ranges back to zero                         |
| <b>Case:</b>            | Powder coated aluminum housing  |
| <b>Dimensions:</b>      | 200 x 8 x 120mm   |
| <b>Weight:</b>          | Approximately 2kg   |

## World leaders



Radiodetection is a proud member of the SPX group of companies, which provide technical products and service solutions worldwide.

Radiodetection and its associated companies specialize in the design and manufacture of products for the location and maintenance of underground pipes and cables. Our aim is to be viewed as the supplier of choice of 'high performance' quality equipment using advanced product technologies. We are also committed to both design innovation and customer support.

## Technical support



Radiodetection equipment users have easy access to technical support. A call to your regional representative, or the Radiodetection head office, will put you in contact with our team of field-experienced technical experts.

## Servicing and repair



Radiodetection has a team of factory-trained service technicians and dedicated service facilities. Turnaround is fast, and costs are very competitive.

## Training



Product training for your operators and training personnel is available on your site, or at Radiodetection's headquarters. Training is with qualified instructors and each trainee receives a certificate to confirm they have received the training.

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