ECHOLOGICS®

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COMPARED TO THE LEAKFINDER-ST™

Everything Else Seems Old School

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SUPERIOR LEAK RESOLUTION AND ACCURACY ACROSS ALL MATERIALS INCLUDING PVC.

It began when Severn Trent Water (STW) in their drive to innovation in the science of leak detection commissioned fundamental research into leakage within plastic pipes. Collaborating with Loughborough University led to the development of a prototype leak noise correlator which demonstrated a marked improvement in performance. Results demonstrated that the new correlator out-performed all commercially available equipment. Following extensive university research, STW approached us to commercialise this correlator. We are globally recognised for our innovative research into leak detection in plastic pipes and were the ideal partner. Further development led to a commercial prototype, complete with active trials using STW leak detection field crews since. These trials have proved so successful that we have launched this as our next generation correlator. Branded LeakFnder-ST™, it's now commercially available

With the LeakFinder-ST™ correlator, we introduce a whole new level of speed and accuracy in locating leaks. Until now, leak noise correlators have had limitations in pinpointing leaks in mains. Speed and accuracy were just relative measures.

SUPERIOR LEAK RESOLUTION

The LeakFinder-ST™ correlator enables customers to locate "quiet" narrow band, low frequency leaks and leaks previously identified as background leakage on water mains, with a wide range of materials such as:

- Plastic (PVC, PE, MDPE, HMDPE)
- Pre-Stressed Concrete Cylinder Pipe (PCCP)
- Asbestos Cement (AC)
- Ductile & Cast Iron (DI, CI)
- Steel

RAPID CORRELATION TIME

As an advanced Windows-based leak noise correlator, the LeakFinder-ST™ correlator can quickly and cost-effectively locate leaks that other correlators cannot. Its enhanced correlation function accurately identities narrow-band leak noise – making it ideal for PVC pipes, small leaks, multiple leak situations, and testing environments where there is high background noise.

EASY TO USE

The LeakFinder-ST™ correlator has been lab and field tested. It was designed and developed by acoustic engineers and the interface perfected in the field, through collaboration with end users, to provide an accurate, non-invasive leak detection system that is simple to operate. Anyone that has ever used Microsoft Windows can easily and confidently learn how to operate the LeakFinder-ST™ correlator.

DIMENSIONS

A. Receivers / Transmitters:
6.6″ x 4.3″ x 2.7″ (16.8cm x 10.8cm x 6.9cm)

B. Sensor: 6.8″ x 0.6″ (17.3cm x 1.5cm)

C. Pelican case: 22″ x 18″ x 10 (56.0cm x 45.5cm x 26.5cm)

LEAKFINDER-ST™

Speed and Accuracy. Without Compromise. Without Digging.

GREAT ACCURACY ON PVC

There was a suspected leak on 3″ PVC pipe in Clungunford, Shrophire area in UK. The LeakFinder-ST™ correlator was utilised to identify the precise leak location by bracketing the leak over 420′ (128 m). The field technicians accurately correlated the exact leak location, which was confirmed by ground sounding over main. Excavation team was dispatched and the leak was found as pinpointed by the LeakFinder-ST™ correlator and the flow rate of the leak was 3.5 gpm (0.8 m^3/hr).

A SINGLE CORRELATION IN SHROPSHIRE, UK

There was a suspected leak on a 3″ Asbestos Cement pipe on Meole Brace, Shropshire area. The LeakFinder-ST™ correlator was used to identify the precise leak location by bracketing the area of the suspected leak over 92 metres. The leak was found in a single correlation. There was no correction or adjustments needed. The leak location that was pin-pointed by the LeakFinder-ST™ correlator was confirmed with the surface noise and noise on stop-tap, 2 metres away from the leak location. Excavation team was dispatched and the leak was found as pinpointed by the LeakFinder-ST™ correlator. The leak size of 4.4 gpm (1.0 m^3/hr) was confirmed.

OVERCOMING NOISE INTERFERENCE IN LEICESTERSHIRE, UK

A difficult leak was detected at Wing in Leicestershire. The night-line for the area had risen and a resultant step test indicated a leak was likely in an area just downstream of Wing Reservoir on a 150 mm AC Pipe with an operating pressure of only 1.2 Bar. There was the additional issue of pump noise at the reservoir that interfered with the leak noise. Investigations by an alternative correlator had resulted in two dry holes and an unsuccessful leak detect. The LeakFinder-ST™ correlator was then utilised and the area of the suspected leak was bracketed by extending the correlation to a distance of 298 m. The resultant peak was accurate and successful excavation / repair followed. The resulting drop on the area flow graph established that the leak had a volumetric flow of 22 gpm (5 m^3/hr).

LEAKFINDER-ST™ GIVES YOU:

Feature: Automatic noise filter and velocity calculator

Advantage: Highly accurate pinpointing of leaks on any material of pipe or multiple pipe types

Benefit: Saves money and effort through the avoidance of dry holes

Feature: Advanced engineering of sensor acoustics and signal processing

Advantage: Finds low-acoustic-frequency leaks, such as in PVC or other quiet leaks, that other correlators miss

Benefit: Saves water and money from the discovery of long-running and previously undetectable leaks

Feature: PC-based software platform with streamlined user interface

Advantage: Easy to determine leak position, frequency levels and filter settings

Benefit: Saves time and effort of field operators

OUTSTANDING INNOVATION AWARD

MOST INNOVATIVE NEW TECHNOLOGY AWARD

These awards are a unique demonstration of what can be achieved with collaboration between a top research university, a leading water utility, and commercial enterprise.

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OPERATIONAL PARAMETERS

Ambient Temperature	-27°F to 130°F (-33°C to +55°C)
Liquid Temperature	33°F to 100°F (0.5°C to 38°C)
Liquid Flow Velocity	< 5 ft/s (1.5 m/s)*
Pressure	15 psi - 150 psi (100 kPa - 1000 kPa)
Pipe Material	Cast Iron, Steel, Ductile Iron, Asbestos Cement, PCCP, PVC, PE, and other plastics
Pipe Diameter	1/2″ to 16″ diameter (13 mm to 406 mm)**
Maximum Sensor Spacing	Contact Sensor: Up to 600′ (183 m) Hydrophone: Up to 1000′ (305 m)

* Higher velocities may result in turbulent flow introducing noise into the pipeline. Measurements can be performed at higher velocities, however sensitivity may be limited.
** Dependent on pipe material and site condition. Please contact Echologics specialists for more info.

SPECIFICATIONS

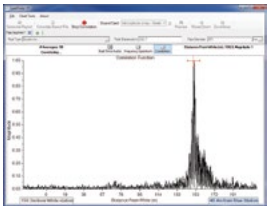
Features	Enhanced correlation function Built-in noise reduction Selectable frequency range (automatic or manual) Propagation velocity calculator Support multiple pipe materials Support mixed pipe sections Playback of recorded leak sounds Volume-controlled 3.5 mm stereo output Available in languages other than English
Sensors	2 x Accelerometers with High-sensitivity piezoelectric sensing element Built-in amplifier with Automatic Gain Control (AGC) Frequency response .5 to 3000Hz 32-lb (14.5 kg) pull base magnet 10′ (3 m) cable having -40 - +194° F (-40 to +90° C) temperature rating
Optional Sensors	2 high sensitivity hydrophones Operating frequency range from 0.5 - 1500 Hz. Low pressure operation up to 150 psi (1,000 kPa), or High pressure operation up to 400 psi (2,700 kPa).
Communication	Wireless radios operating in the Low Power Frequency Bands: - Industrial/Business Pool Group A1 (450 to 470 MHz) - ISM 433 MHz (70 cm) band. Operating range: 1.2 mi (2 km) Note: radio operating licence depends on geographic location
A/D Converter	2 channels, 16 bit resolution 0.5 to 20,000 Hz frequency response (-3 dB @ .1 Hz) Time resolution: 25-microsecond (44.1 kHz sampling rate) Signal to Noise Ratio (SNR) = 84 dB (44.1kHz, Gain = 0dB) Adjustable gain: -31 dB to 24 dB Plug and Play Driver
Security	HASP key encryption.
EMI	FCC15 Class A/ICES-003/EN 55011
Power Supply	Input Voltage: 15V DC Rechargeable high-capacity NiMH batteries Low-battery indicator Battery charge indicator 15 hours of operation on fully charged battery @ 20 C (68 F)
Enclosure	Conforms to Waterproof IP68 Rugged aluminum case Protective rubber boots for durability and shock resistance Foil switches
Warranty	Two-year limited warranty. Hardware protection plans covering extended warranty or accidental damage are available. Warranty covers manufacturing defects only. It does not cover failure resulting from misuse, accident, modification, field maintenance and unsuitable physical or operating environment. The warranty does not cover the sensors except for dead-on-arrival cases.

STEP 1: VERIFY UNITS ARE FUNCTIONAL

STEP 2: MOUNT TWO SENSORS OUTSIDE OF A SELECTED PIPE ON AIR VALVES, FIRE HYDRANT OR OTHER EXISTING APPURTENANCES.

STEP 3: SELECT PIPE MATERIAL ON TRANSMITTERS.

STEP 4: VERIFY RADIO COMMUNICATION ON THE RECEIVER.



STEP 5: START CORRELATION ON THE LAPTOP AND QUICKLY FIND YOUR LEAK.

For more information about us or to view our full line of water products, please visit www.echologics.com or call Echologics® customer service at 800.423.1323.

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