

# Leak Sensor+

It's estimated that up to 30 percent of water pumped through distribution systems is lost to leaks. In today's conservation-driven environment, water losses — and associated pumping and treatment costs — add up quickly. Distribution leak detection, and keeping system losses minimal, are important operational concerns for water providers.

The Leak Sensor+ is an advanced approach to distribution system leak detection. Part of Itron's advanced metering solution, for ChoiceConnect 100, the sensor is the result of merging the water meter module with an acoustic sensor to create a single point for collecting meter data and monitoring for distribution system leaks. The Leak Sensor+ leverages the robust network of ChoiceConnect 100. It offers unattended daily monitoring of leaks in distribution lines for proactive leak detection and timely mitigation. This reduces non-revenue water losses,

associated costs and potential service disruptions caused by major leak events.

The innovation behind the Leak Sensor+ is a vibration sensor, amplifier, processor and bidirectional one-wire automated meter reading (AMR) interface. Every day the acoustic sensors analyze sound patterns in its environment, detecting new, evolving and pre-existing leaks automatically. Sensors attach to endpoints and transmit vibration recordings along with other metering information to the utility via walk-by, drive-by or fixed network data collection. An Itron web interface — mlogonline Network Leak Monitoring System — handles data interpretation and

analysis of the recordings and graphically displays all sensor locations using visual maps and satellite images, highlighting the status of leak locations.

An expanding database of historical information provides comprehensive condition assessment of the entire water distribution system.

Simple, affordable and technically superior, the Leak Sensor+ is sensible leak detection and location at optimal cost. Best of all, the Leak Sensor+ leverages the investment in fixed network meter data collection technology, often paying for itself within a few years.

## SPECIFICATIONS

### How It Works

#### Step 1:

An Itron Leak Sensor+ is deployed in the water distribution system.

#### Step 2:

The Analyze process receives readings by e-delivery to mlogonline™ (FTP or E-mail).

#### Step 3:

mlogonline™ Network Monitoring System computes a leak index for each Leak Sensor and assigns a leak status:

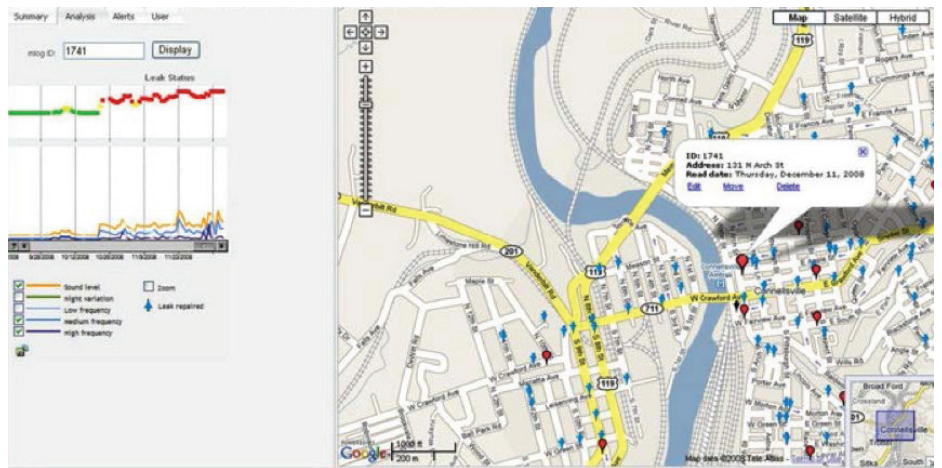
- No leak
- Possible leak
- Probable leak
- Out of Status

#### Step 4:

The 100W+ communication module generates messages, alerts and reports to direct leakage investigations and pinpointing activities.

mlogonline™ Network Monitoring System

The map shows leakage at a glance, overlaying leak indexes from sensors within an area of the water distribution system. The color image indicates areas of low (green) through high (red) leak index, using Leak Sensor+ advanced digital signal processing.



a compact form for easy field installation and lower cost of ownership

- » Automated capture and data transmission of actual vibration recordings to the utility for advanced analysis and applications, rather than simple yes/no flags
- » Historical leak detection data for interpretation, prioritization and mitigation

### Sensing

- » Sensitivity: 1V/g
- » Range: Up to ±300 linear feet of pipe
- » Bandwidth: 10Hz – 1,000Hz

### Power

- » Source: Powered by the 100W+ communication module

### Physical/Environmental

- » Operating temperature: -10° to +50° Celsius
- » Operating humidity: Up to 100% relative humidity
- » Product identification: Numeric and barcoded serial number
- » Exposure rating: Sealed, waterproof and submersible IP68
- » Housing: Molded glass-filled polycarbonate

- » Weight: 1.5 ounces (45g)

- » Dimensions: 1.2 x 1.5 (diameter) inches (3.0 x 3.8 cm)

### Installation options:

Leak Sensor+ is installed permanently either indoors or outdoors on the water service pipe, usually near a water meter on the service line with a U-bolt, back plate and wing nuts

- » Can be mounted on service lines up to 2" in diameter

Water System Summary			
Last Updated: 12/11/2008			
573 mlogs installed			
<input type="checkbox"/> 22 Probable Leak	<input type="checkbox"/> 495 No Leak Likely	<input type="checkbox"/> 225 Leaks	
<input type="checkbox"/> 41 Possible Leak	<input type="checkbox"/> 24 Out of Status	<input type="checkbox"/> 21 Issues	
mlog Devices - Exact...			
ID	Address	Status	Bank
15856	1311 W Crawford Ave	●	1
1616	134 E Peach St	●	2
12211	124 N Arch St	●	5
1628	703 Rockledge Rd	●	6
1683	114 N Prospect St	●	7
1685	814 Marietta St	●	8
1682	1922 Second St	●	9
1687	408 Elm St	●	10
1518	610 Trump Ave	●	11
1611	103 W Blake Ave	●	12
15858	212 E Cedar Ave	●	13
1687	130 W Hunter St	●	14
Leak/Status			
Type	Details	ID	Address
●	10/18/2008	1724	231 S Prospect St
●	9/24/2008	1465	Decatur near Pulaski...
●	9/15/2008	1597	414 S. 9th Street

Leak Sensor+ information table displays all Leak Sensor+ data from one or more water distribution systems—sorting, searching and ranking all sensors by leak status:

- Probable leak
- Possible Leak
- No Leak Likely
- Out of Status



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