

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 Water SaveSource and 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. Leak Sensor leverages the robust network of Water SaveSource and 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 throughout the day along with other metering information through the fixed network to the utility. 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 provide 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.

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 ERT® Communication Module generates messages, alerts and reports to direct leakage investigations and pinpointing activities.

mlogonline Network Monitoring System

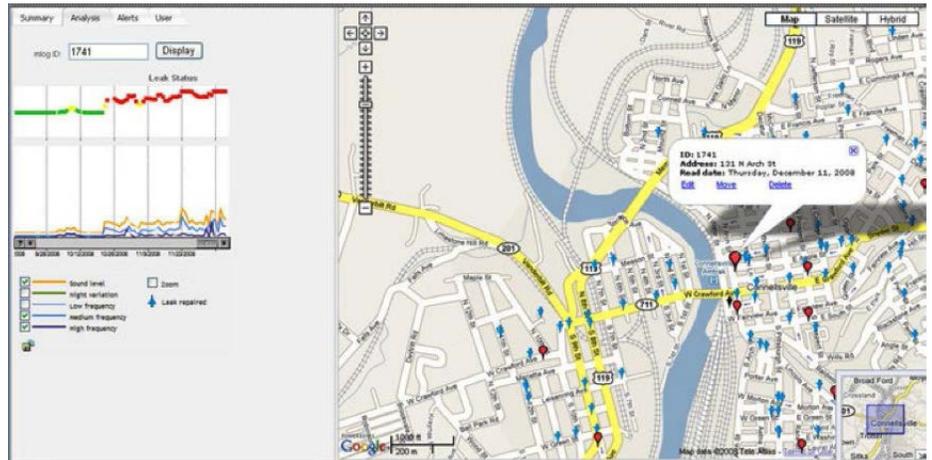
- » Operating systems: MS Windows® XP/2000/NT
- » Maximum number of sensors: Unlimited
- » Integrated water system maps

SPECIFICATIONS

Benefits

The Leak Sensor delivers unprecedented leak detection capabilities including:

- » Advanced acoustic leak detection monitoring and meter data collection in 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



mlogonline Network Monitoring System The map shows leakage at a glance, overlaying leak indexes from MLOGs within an area of the water distribution system. The color image indicates areas of low (green) through high (red) leak index, using MLOG advanced digital signal processing.

TECHNICAL SPECIFICATIONS

Sensing

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

Power

- » Source: Powered by the Water SaveSource Endpoint or 100W ERT 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:

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

ID	Address	Status	Rank
15866	1311 W Crawford Ave	●	1
15827	134 E Peach St	●	2
15724	120 N Arch St	●	3
15888	703 Radcliffe Rd	●	4
15880	114 N Prospect St	●	7
15854	824 Hercules St	●	8
15857	1522 Second St	●	9
15827	400 Blue St	●	10
15828	435 Trump Ave	●	11
15821	103 W Blake Ave	●	12
15853	212 E Cedar Ave	●	13
15822	150 W Parker St	●	18

Type	Details	ID	Address
▶	▶	1720	211 S Princeton St
▶	▶	1682	Quaker near Park...
▶	▶	1557	414 S 9th Street

MLOG Information Table Displays all MLOG data from one or more water distribution systems—sorting, searching and ranking all MLOG sensors by leak status:

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



At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: www.itron.com

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