

Water Management Suite: Leak Management

The water utility asset management system for
effective water loss control

Make the most of your energySM

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Water Management Suite: Leak Management

Schneider Electric's comprehensive Water Management Suite (WMS) is an integrated set of modular systems offering solutions specific for management of water supply and distribution – the foundation of the Schneider Electric Smart Water Network.

Fundamental in the Schneider Electric WMS is the Leak Management (LM) module, a set of tools using real-time water network data for efficient asset management. Water utility managers are finding this progressive solution helps the water utility improve operations and business decisions to better serve all of its stakeholders:

- Faster awareness of leak existence and response time
- Reduced resource losses and improved operational costs
- Better customer service
- Enhanced environmental stewardship.

Effective system analysis and leak detection

The automated calculations provided by the WMS Leak Management (WMS:LM) application allow timely quantitative analysis of current network dynamics and comparison with historic data – facilitating rapid detection and location of water line leaks and bursts. Automating this process with the WMS:LM application is:

- Reliable – prompt identification of bursts; no false alarms generated
- 24/7 – continual analysis and hydraulic simulation
- Robust – functions under fluctuating conditions
- Sensitive – detects small leaks
- Accurate – identifies with reasonable precision the location of the leak
- Broad-purpose – applicable to both transmission lines and distribution networks.



The WMS:LM solution includes advanced computational tools to determine the current status of the water network

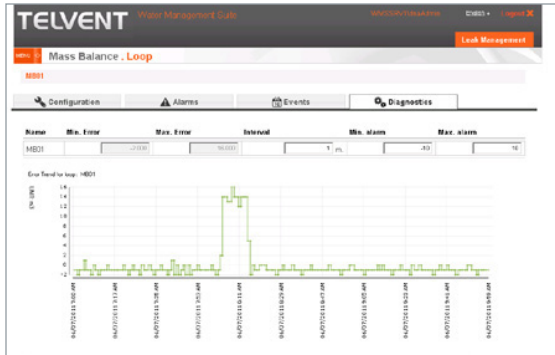


The high-value Schneider Electric WMS Leak Management solution helps water utilities optimize their management of our world's most valuable resource

4 types

WMS: LM runs four types of computational pipeline monitoring methods

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Mass Balance

Real-time calculations reveal water loss information promptly

The WMS:LM solution reflects Schneider Electric's advanced-technology information management expertise, with advanced computational tools to determine the current status of the water network. It uses real-time pipeline monitoring data collected by the water utility's supervisory control and data acquisition (SCADA) system and network hydraulic models.

WMS: LM runs four types of computational pipeline monitoring methods:

- Mass Balance, comparing pipeline inlet and outlet volumes
- Flow Loops, comparing pipeline inlet and outlet flows
- Minimum Night Flow, tracking night consumption for new leak occurrence
- Hydraulic Supervision, comparing measured hydraulic parameters with simulated values.

Mass Balance

The Mass Balance algorithm performs mass balances in selected sections of the network over a configurable time interval. This functionality tracks the water loss progress in the network and calculates water balances.

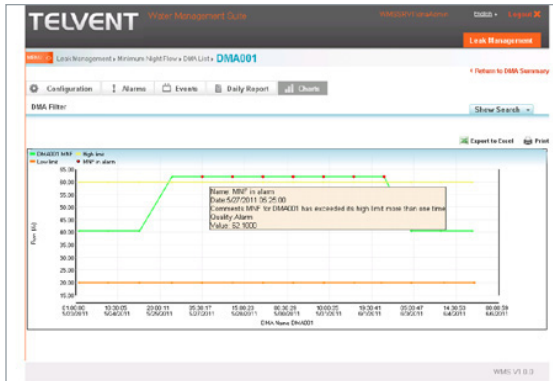
Flow Loops

The Flow Loops algorithm is based on the Instant Flow Balance method. It quickly detects leaks or unauthorized intermittent uses in transmission lines with steady-state flow conditions.

Minimum Night Flow

This algorithm, based on the industry standard methodology of Minimum Night Flow (MNF) analysis, is used to detect leaks in distribution networks at the District Metered Area (DMA) level. The system monitors night flows for multiple DMAs to detect deviations of MNF from dynamic configurable limits.

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Minimum Night Flow

Hydraulic supervision

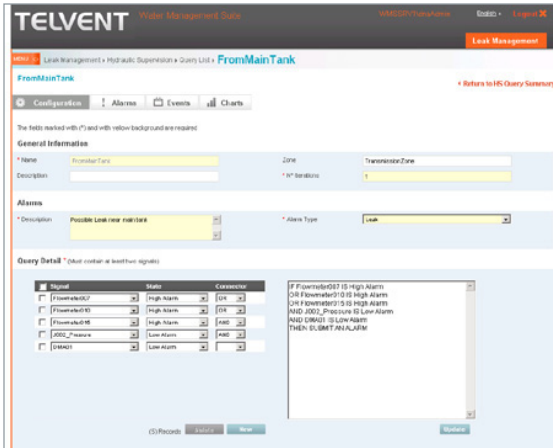
This method takes advantage of the integration of water supply hydraulic models with SCADA systems. The algorithm determines the existence of a leak by:

- Comparing real-time SCADA field values against values obtained from a simultaneous hydraulic model simulation that reflects ideal performance of the system
- Establishing a relationship of multiple signals such as flow and pressure variables at particular points of the network – defining specific hydraulic behaviors that might signal leaks.

High-mileage solution

The WMS:LM tools are inter-related, adaptable to customer network conditions and easily configurable and scalable to reflect networks ranging from simple transmission schemes to complex water distribution systems. Its configurability makes it work for your entire organization:

- Multi-language environment and multiple-measurement choices facilitate training, monitoring and event response
- Totally configurable alarm management based on fixed threshold definition, adaptive limits or logic rules
- Complete supply system control at a glance through the Event Manager tool (alarms, pre-alarms, changes in settings, field data quality)
- Graphic representation of leak-related information
- Easy integration with other enterprise systems such as CMMS, ERP, GIS, customer management and billing system – supporting a comprehensive leakage management cycle.



Hydraulic Supervision

Extend Leak Management with other WMS modules

Add further functionality with Schneider Electric systems for optimum water distribution management and security. Check our Web site for more information about Schneider Electric's Water Management Suite and related solutions for automated monitoring and control using real-time information.

Put industry-leading technology to work for your water utility

Schneider Electric is committed to best-in-class sustainability of the environment, to excellence in our solutions, and to earning trust in our client relationships. The high-value Schneider Electric WMS Leak Management solution puts this commitment to work, to help water utilities optimize their management of our world's most valuable resource.

24/7

Continual analysis and hydraulic simulation

100%

Water utility managers are finding this progressive solution helps the water utility better serve all of its stakeholders

Schneider Electric USA, Inc.

9110 West Dodge Road
Omaha NE 68114
Phone: +1-800-610-0777
Fax: +1-402-255-8125
<http://www.schneider-electric.com/us>