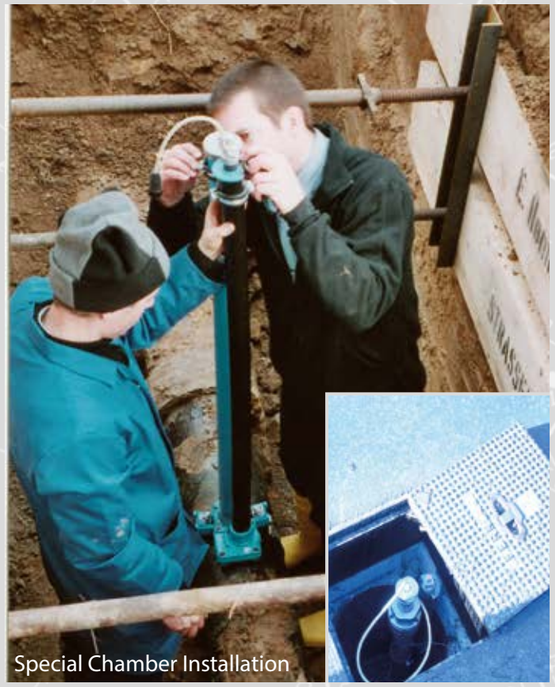

Special Chamber Installation

Easy Installation

TECHNICAL SPECIFICATION WLM-SENSOR:

Mechanical Data	
Dimension	d= 5/4“ length 340 - 990 mm
Weight	0,5 Kg without cable
Connection cable	5 m (water resistant)
Enviromental protection	IP 68
Probe material	Stainless steel 1.4571
Probe head	Synthetic material PAS-L
Ambient temperature	- 10 °C ..... 40 °C
Storage temperature	- 30 °C ..... 60 °C
Medium temperature	0 °C ..... 40 °C

Flow measuring	
Power supply	110/220VAC, battery, solar panel
Pipe material	all pipe materials
Pipe dimension	80 - 2000mm

Flow measuring	
Measuring principle	Electromagnetic measuring method
Flow rate	0,01 m/s to 9,999 m/s
Resolution	0.001 m/sec
Accuracy	2% FS with turbulent flow
Measuring Direction	bi-directional
Medium	min conductivity 50 µS

Pressure measuring	
Measuring principle	piezzo-resistive ceramic-technology
Membrane	ceramics
Range	0 .... 16 bar
Overpressure	up to 30 bar
Accuracy	0,2 % FS

Noise measuring	
Measuring principle	piezzo electric-polymer sensor
Amplification	5000
Frequency range	8 Hz ..... 3500 Hz
Output	analog (correlator), digital

Water temperature	
Range	0 °C ..... 60 °C
Measuring position	Probe head

Data logging and output	
Interface for probe	RS 232, 4-20 mA (optional)
Measuring cycle	1 sec (from 1sec to 1h)
Memory cycle	1 min (from 1sec to 1h)
Value calculation	Actual, min, max, median
Memory size	512 Kbytes (Circular buffer)
Data output	RS 232, 4-20 mA, Modbus/TCP
Data transmission	Cable, GPRS/GSM, Analog, Ethernet

Technical design and data subject to change without notice.

For further information please contact:

MARTINEK GmbH
Measurement Technology
Burgweg 8
A-6840 Götzis
Austria

Telefon: +43 - 720 - 210021
Fax: +43 - 720 - 210021-30
Email: martinek@martinek.org
Web: www.martinek.org

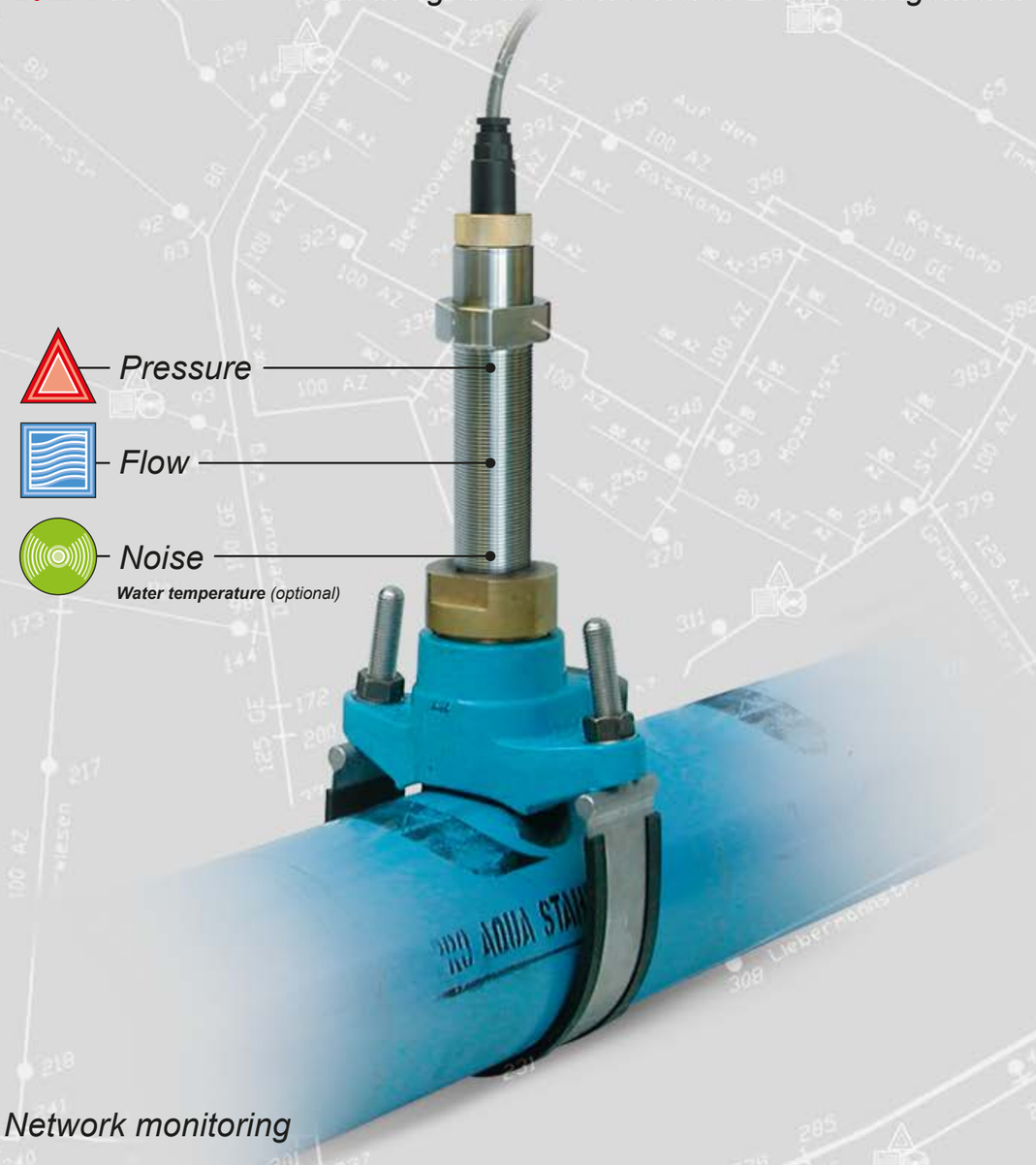
Agent:

MARTINEK GmbH MEASUREMENT TECHNOLOGY

WLM-SYSTEM pat. reg.

NOVALYS-SOFTWARE

An integral and active Water Loss Management.



Network monitoring

Inductive flow-metering

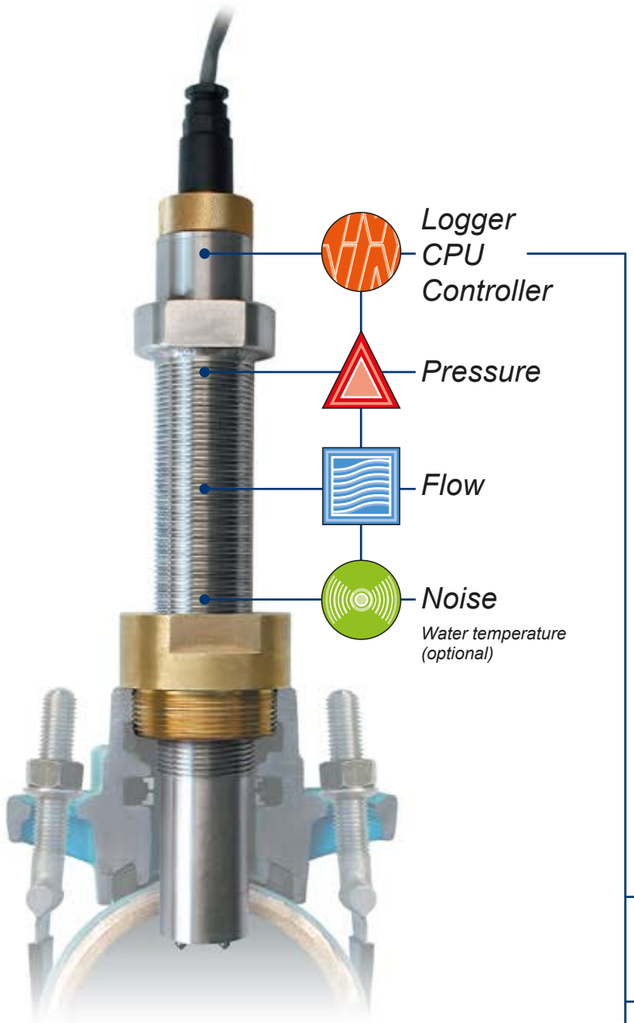
Hot tapping

Active leakage control

MARTINEK GmbH MEASUREMENT TECHNOLOGY

WLM-SENSOR

The WLM-Sensor combines an inductive flow-meter, a piezzo noise microphone, piezzo pressure sensor and a temperature sensor in one single unit. The WLM-Sensors mounted at the intersection point of the laminar and turbulent flow (mean velocity).



Another important feature of the maintenance free WLM-sensor is the integrated electronic. The electronic package includes all of the necessary control elements for the sensor as well as a logger for data storage. A CPU calculates the significant values for each parameter measured and manages the communication to the central computer.

WLM-SYSTEM-DESCRIPTION

Application

The main objectives of the WLM-SYSTEM are: water loss monitoring by automatic leak zone generation (Virtual Zone), which enables sustainable reduction of loss water and an active support for strategic leak detection. Additionally, the system allows the development of network diagnostics.

The parameters, FLOW, NOISE, PRESSURE and TEMPERATURE are continuously measured. Typically, this measurement is performed during the calm night hours, i.e. between 3 and 4 am. Measurements are obtained, processed and stored for the later transmission to a central PC (or online). Every deviation found between the measured and previously stored values (for example increased flow, flow direction changes, decreased pressure and/or a higher noise, leak- or flow noise) is automatically registered and displayed with an alarm raised by the AQUALYS-Software. Assuming that all registered leakages are properly repaired, a permanent improvement in the water loss situation is achieved.

Function of the System:

With the installation of the WLM-SYSTEM the current minimum and maximum values are recorded and set as a default value.

Main Features:

- *Installation to any pipe dimension/material*
- *Active leakage survey*
- *Hot tapping under full pressure*
- *Long term maintenance free*
- *Keeping leakage level at a minimum*
- *Analogue noise interface – hydrophone (connection to correlater)*
- *Diagnosis of network condition*
- *Step by step installation*
- *Immediate leakage warning*
- *Easy connection to any SCADA system*
- *SMS-Warning*
- *Optional temperature measurement*
- *Highly cost effective “Sensor” - chamber installation*
- *Theft- and flooding alarm*
- *Water balance module (totalizer)*
- *“ONLINE” leakage warning*

POWER SUPPLY

- *Mains Supply (110/220 VAC)*
- *Battery (12 VAC)*
- *Solar Panel*

The location and time of measuring can be chosen between the alternatives mentioned above.

TRANSMISSION

- *GSM / GPRS*
- *Modbus (RTU/TCP)*
- *4-20 mA*
- *Ethernet / LWL*

The transmission is dependent on the location, the mode and frequency of queries. (i.e. online, 30 min to 24 h)

AQUALYS-SOFTWARE

The Software for the WLM-SYSTEM manages both the data transfer between the central PC and the WLM-Sensors, and enables a graphical and numerical display of these data. The user-friendly software provides the operator with information about the current leakage situation of the surveyed zone in the network. On an overall map the user verifies graphically if and where a leak appears. A more detailed screen of the failure (leakage zone) shows the numerical values and a time dependent diagram of FLOW, NOISE, PRESSURE and TEMPERATURE (optional).

The main features of the AQUALYS-Software are:

- *Easy setup*
- *Free licence*
- *Short/ long term reports*
- *Automatic offset adjusting of min/max levels*
- *Compare measuring points just by one click*
- *Automatic boundary setting*
- *SMS-info and warning*
- *Remote setting of WLM-Sensors (i.e. measuring time)*
- *Live data online and historical information*
- *Automatic export option (connection to SCADA)*
- *Totalizer for single meter or DMA including data from 3rd party (water balance)*
- *Easy zoning option (DMA) or virtual zoning*