

WATER NETWORK OPTIMISATION LEADS TO REDUCTIONS IN WATER LOSSES AND COST SAVINGS

MEASUREMENT TASK

Water supply companies are required to monitor and maintain extensive pipeline networks covering a large geographical area. Access to pipework is often limited, suitable measurement points are remote and rarely equipped with a power supply connection. This was the situation faced by engineers working in the town of Wädenswil (Switzerland) where they were conducting pipe and flow surveys as part of a network modernisation project.

Katronic's Swiss distributor, Rolf Muri AG, supplied the customer with a measurement system that allowed flow data collection over an extended period of time. This was needed in order to give more accurate information and helped the service engineers to draw conclusions about the correct dimensioning of the pipeline network. What was of certain interest were the levels of water consumption at peak times as it was hoped that a narrowing of the pipe cross-section would lead to a more consistent flushing of the pipes. It was also expected that water losses of about one liter/second could be eliminated through the programme of pipe network modernisation.

SOLUTION

Thanks to its robust IP 67 housing, the portable KATflow 210 ultrasonic flowmeter is ideal for outdoor installation and therefore perfectly suited for this measuring task. With the flowmeter's built-in, rechargeable long-life batteries, measurements can be carried out for weeks. In order to access the measured values quickly and easily from the office, a remote data transmission system was installed. A Tetraedre system capable of collecting an output from the KATflow 210 and presenting the measurement data was provided to the client.

Once the recorded values were analysed, it was possible to confirm that the maximum peaks of consumption had not exceeded velocity limits, even with pipes of smaller nominal diameters than the usual 400 mm pipe. In addition, the proportion of successful flushing processes in the pipe system would be significantly increased by 86 % (previously 26 %), which in turn would lead to lower water consumption. The knowledge gained was used to optimally dimension the pipes to be used for the new water network. Through this work it will be possible to make six-figure cost savings due to the use of drawing smaller pipe dimensions into the existing infrastructure rather than having to commit to significant expensive earthworks.

ADVANTAGES

- Enormous savings potential by minimisation of the line cross-section and use of existing network structure
- Significant improvement in daily line flushing
- Self-sufficient power supply of the flowmeter
- Waterproof housing to keep the measurement technology running outdoors
- No opening of the line and no process interruption necessary

SPECIFICATIONS

Installation type	Portable
Medium	Potable water
Pipe material	Cast iron
Pipe diameter	400 mm
Temperature	Ambient
Special requirements	Long-term measurements

APPLICATION



Ultrasonic flowmeter KATflow 210 installed on large water pipe.

INSTRUMENT SOLUTION



The waterproof KATflow 210 is the perfect tool for long-term measurements.