

Water treatment plant saves money and time by installing ultrasonic flowmeter

SITRANS F US SONOKIT

A water treatment plant in the southwest United States takes its raw water from a lake-reservoir, then treats and filters it to distribute for drinking water. They use a typical filter bed in the water purification process.

Challenge

The water plant needs to monitor the raw water coming into the plant for purification as well as the finished drinking water leaving the plant. Typically, water plants use flowmeters to measure the influent and effluent flows. The customer had been using DP transmitters with Venturi tubes and had also tried inexpensive paddle wheel meters with little success. Both of these options needed a great deal of maintenance, and performed with lower accuracy than required.

The flow rate value coming into the plant from the reservoir wet well affects all other aspects of the water treatment process, including the filter bed efficiency and the total amount of chemicals used to treat the water on a daily basis. As a result, it was important for the customer to find a more accurate flowmeter (1.0% or better) at an affordable cost and requiring minimal maintenance.

Solution

The local Siemens representative reviewed all the parameters of the application and recommended the SITRANS F US SONOKIT from Siemens for the plant's 72-inch pipe.

The SITRANS F US SONOKIT Series is a transit-time-based ultrasonic flowmeter designed for retrofitting onto existing pipelines. The kit includes all necessary parts and special tools to make the installation either a single or dual-track flowmeter. The kit is designed for easy installation on empty pipes, or pipes under pressure without having to shut down the process (hot tap). It has inline wetted transducers in contact with the process fluid, which assures superior accuracy and reliable performance.

In this case, the SONOKIT flowmeters were installed in a vault with a side-by-side piping arrangement. To facilitate the installation of the transducers, the pipes were prepared before water was pumped into the system.

The case at a glance

Region: Southwest USA

Industry: Water purification

Customer: Water treatment plant

Challenge: Monitor the flow of raw water coming into the plant and drinking water leaving the plant

Product: SITRANS F US Sonokit

Main benefits:

- No hot tap needed for original installation
- Transducers can be removed under pressure if needed
- Superior accuracy
- Lower cost and maintenance
- Extensive availability of service and support



The SITRANS F US SONOKIT retrofit kit offers a simple, accurate alternative to traditional flowmeters if necessary.

Cost and accuracy were the two most important factors for the customer in choosing the Siemens SONOKIT flowmeter. Given the published accuracy of 0.5% and the inexpensive cost and the easy installation of the SONOKIT flowmeter in comparison to a 72-inch electromagnetic flowmeter, the customer found this solution to be much more effective for their needs. Adding to the convenience is the fact that, if necessary, the SONOKIT transducers can be replaced at a later time while the process is running by using the hot tap equipment.

Benefits

- **Cost savings** – The cost to purchase and retrofit install the SONOKIT ultrasonic flowmeter was at least \$50,000 less than it would have cost to purchase and install a 72-inch magmeter. Maintenance time was also reduced by replacing the DP transmitter and Venturi tubes with the SONOKIT.
- **Improved reliability** – The customer now knows the true amount of water flowing into and out of the plant. This allows for increased filter efficiencies and more exact chemical usage for the process control, which helps to contain the costs of those chemicals.
- **Improved accuracy** – The SONOKIT is more accurate than the previous DP transmitters used in conjunction with Venturi tubes. The SONOKIT has an accuracy of 0.5% (close to a magmeter) vs. 2-3% for the DP transmitters.

- **Unique features** – No hot tap is needed for original installation, but if necessary the transducer can be removed under pressure for future maintenance. Transducers are mounted and sealed through to the inside of the pipe, which is covered and lined in concrete.

About the SITRANS F US SONOKIT Retrofit Flowmeter

The SITRANS F US SONOKIT retrofit flowmeter offers a simple and accurate alternative to traditional flowmeters because it can be retrofitted onto existing pipelines. It is a transit-time-based ultrasonic flowmeter with inline transducers for superior accuracy and performance.

The kit includes all necessary parts and special tools to install as a single or dual-track flowmeter for improved accuracy. It is designed for installation on empty pipes or pipes under pressure without process shut-down (hot tap). The SITRANS F US SONOKIT consists of the transducer sensors, interconnecting cables and transmitter (model SITRANS FUS060).

The SITRANS FUS060 transmitter features a range of advanced technologies to optimize efficiency and accuracy, and is ideal for meeting OIML R117 custody transfer standards. It comes equipped with dual (2) tracks as standard, or optional 4 tracks for better performance and higher accuracy. Features include extended diagnostic capabilities, ATEX certification and bus communication.

Siemens Industry, Inc.
Industry Automation Division
CoC Ultrasonic Flow
HAUPPAUGE, NY
USA

Subject to change without prior notice
Order No.: PIFL-WUSF-0512
All rights reserved
Printed in USA
©2012 Siemens Industry, Inc.

www.siemens.com/flow

The information provided in this case study contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.