

Accurate dosing of polymers with SITRANS FC Coriolis flowmeters

Process Instrumentation and Analytics



SITRANS FC MASSFLOW, MASS 2100 sensor with MASS 6000 transmitter, controls and doses the amount of polymers being used.

Telstar Instruments is an integrator and service company located in Concord, CA. They serve the water, wastewater and industrial markets. Telstar was working on a project for a municipal water treatment plant that delivers drinking water to more than 24,000 customers. The plant also delivers recycled water to more than 60 larger customers, including the city's golf course, airport and an assortment of landscape and irrigation sites. Recycled water also provides fire protection for 22 commercial and industrial buildings.

Challenge

The treatment plant needed to automatically and accurately add very small amounts of trace polymers to their water treatment process. The polymers' maximum flowrate was a very low, 150 ml/min. The polymer is very expensive, and the customer wanted to save money by more accurately dosing the polymers and improving the process efficiency. Prior to hiring Telstar, the treatment plant did not have a way of accurately dosing the very low flow polymers into the process accurately and precisely. The result of this inability to properly measure the polymer was that the plant always overdosed the flow to assure that there were sufficient quantities of the chemical present to do the job.

Solution

Telstar Instruments installed a Siemens SITRANS FC Coriolis MASS 2100 1/4" flowmeter to control the dosing of the polymers. All of the SITRANS FC Coriolis meters are completely user configurable, involving both software and hardware. This simple interface eased setup and programming for Telstar. The intelligent USM II (Universal Signal Module) platform allowed Telstar to custom tailor their sensor electronics to match the changing requirements of the customer.

The flow transmitter's USM II platform benefits from the use of an "add-on" digital communication module that permits the custom tailoring to the customer's control system. The modules are available in many of the popular communication protocols, e.g., HART, PROFIBUS, DeviceNet, Modbus or Can-Open. Once installed, the module is automatically detected and programmed to factory settings via a sensor-specific SENSORPROM flow memory unit. The SENSORPROM is a dedicated mass flow chip with the ASIC (application-specific integrated circuit) technology that provides all Siemens Coriolis flowmeters with an improved step response.

SITRANS FC MASSFLOW
product range



Measurement is virtually unaffected by variations in pressure, temperature, density, electrical conductivity and viscosity. Application flexibility is further enhanced, as the meter can be located at any point in the installation. A uniform sensor interface enables true plug-and-play operation. Installation can be completed in less than five minutes, and no special tools are required.

Benefits

- Cost savings – Accurate monitoring and dosing of the polymers saves the municipality money by not wasting expensive polymer.
- Improved process reliability – The customer can now rely on the correct and accurate polymer dosing to ensure the reliability and performance of the process.
- Improved quality of finished product – By ensuring the accuracy of the polymer dosing, the treatment plant can be sure of the water quality that is being delivered to its customers.

Innovative flow measurement building on strong tradition

The SITRANS F family of flow measurement products has a well-established reputation for reliability in day-to-day applications. These trusted flowmeter products range from simple flow indicators to highly developed bus-compatible electronic flow measurement units. SITRANS F offers the right flowmeter for every application, medium and industry and is a perfect solution for measuring liquids, gas and steam.

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