

Water Treatment Plant Uses Dual Diaphragm Pump for ALUM Dosing

Application: SUEZ Water South Jersey is located in Toms River, New Jersey. Their mission is to provide safe and clean water to the Township of Toms River, Borough of South Toms River, and a portion of the Township of Berkeley.

SUEZ is a leading environmental company that takes pride in integrating sustainability into their business practices for the communities served. Water and wastewater management provided to South Jersey is designed to optimize their economic considerations while also meeting or exceeding all regulatory requirements.

Problem: SUEZ Water Treatment Plant in Toms River needed to precisely dose a low concentration of ALUM at a high pressure. ALUM is a chemical compound that is a hydrated double sulfate of aluminum and potassium used to remove turbidity. When used effectively, Alum will keep the water clear by removing color and suspended particles.

SUEZ is using several FLEXFLO® model M3 peristaltic dosing pumps to inject various chemicals into the water system. The employees prefer peristaltic pumps in this application because of their ease of use with SCADA systems. However, there had been concern that the amount of pressure needed to inject the ALUM is too high for use with peristaltic style pumps. The result could be that tube life would be decreased, causing increased maintenance due to a greater number of pump tube replacements being required.

Solution: The solution was to employ the use of CHEM-FEED® MD3 Dual Diaphragm Chemical Dosing Pumps, which can be used successfully in high pressure applications. The MD3 dosing pump mimics the best traits of peristaltic dosing pumps, however, since there is no pump tubing there is no concern of increased maintenance when dosing at high pressures.

The MD3 Dual Diaphragm Pump design provides smooth near continuous flow. When the MD3's first diaphragm is in the suction phase, the second diaphragm is in the discharge phase to achieve this smooth flow, which results in no gas build-up and no loss of prime.



The hybrid CHEM-FEED MD3 diaphragm-type dosing pump has an excellent turndown ratio of 2000:1, and the gentle pumping action means no pulsation dampener is required. With 380 strokes per minute, the CHEM-FEED® MD3 provides a remarkably even, steady flow.

MD3 is engineered and built to provide long service life even at high pressures, so no pressure regulator is needed.

The design of the MD3 is 50% more energy efficient than similar units currently available.

In addition to the MD3 dosing pumps, SUEZ also installed the Sonic-Pro® MS6 chemical feed sensor. The sensor closely tracks chemical being fed into the system, making certain the proper amount is being injected. Data advising the exact flow rate being dosed is delivered directly from the MS6 to the SCADA system.

The MS6 gives a precise measurement of chemical being fed so that proper dispensing / dosing can be easily verified.



Result: SUEZ successfully injects a low concentration of ALUM at high pressure using the CHEM-FEED® MD3 dual diaphragm metering pump, and there is never a need for tube replacement. In addition, by installing the Sonic-Pro® MS6 chemical feed sensor, SUEZ is able to quickly verify the exact amount of ALUM being injected into their application, and that information is automatically sent to the SCADA system. With this improvement SUEZ continues to standardize its chemical systems by optimizing both equipment and functionality to meet operational needs.

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