

Absolutely advantageous

➤ Grundfos Digital Dosing solution provides massive savings in wastewater treatment plant at Verl-Sende, Germany.

Old plants require new technology

A large number of wastewater treatment plants all over the world have now been in operation for many years, perhaps decades, and for many of these old plants, it is now time to replace pumps and other equipment.

Older dosing pumps are often oversized and difficult to control or adjust. Normally, with these pumps, the setting of the dosed amount is done indirectly via the manual setting of stroke length. Possible alternatives are inverter frequency control or electrical stroke length regulation, both of which are expensive solutions.

Innovative solution with Grundfos Digital Dosing

In June 2001, at the wastewater treatment plant at Verl-Sende in Germany, the dosing of flocculants was carefully examined from a-z. The old dosing pumps were subsequently replaced with a Grundfos Digital Dosing pump, model DME 48-3 AR.

At the same time, the control system was changed from open-loop control to completely closed-loop regulation with total implementation in the process control system.

Grundfos Digital Dosing offers many benefits:

- Large operating range from 0.1%-100% without any need for re-calibration
- Easy setting and operation, even for less trained personnel
- Precise setting of the dosed amount via the easy-to-read display
- Steady and pulsation-free dosing
- Sturdy design and reliable operation



Optimised process and secure pump operation provide shorter payback time

Flocculants consumption reduced by 50%

After one year of operation the entire dosing process system had been optimised as a result of the easy operating and setting of the pump. The consumption of flocculants was registered during the period and it was found that this was reduced by a massive 50% due to prevented overdosing.

The resultant savings paid back the initial investment in the Grundfos DME dosing pump after a short period of time, and the reduced chemical consumption will continue to benefit plant operation as well as the environment for years to come.

The Verl-Sende system

There are currently two Grundfos DME 48-3 AR dosing pumps in operation at the Verl-Sende plant: one continuously doses 4.2 l/h Ferric while the other doses 6.2 l/h polyaluminium hydroxide.

The entire process is controlled by a process control system, which accurately calculates the required amount of chemicals and controls the dosing pumps accordingly.

The registration of the dosed amount of chemicals is done via electronic flowmeters, which operate under optimal conditions due to the pulsation-free operating of the dosing pumps.

In order to optimise the entire chemical process, it is necessary to avoid cyclical fluctuations. This is achieved by dosing the requested chemicals with high degree of precision, regardless of the required quantity.

The Grundfos Digital Dosing solution

2 DME 48-3 AR pumps with alarm relay output

Max dosing capacity	48l/h
Max operating pressure	2.6 bar
Operating voltage	100-240V/ 50-60 Hz

Unbeatable advantages

- Setting range from 0.1 - 100% with high dosing precision without re-calibration and without setting tables
- Pulsation-free dosing due to innovative drive mechanism and direct control of the diaphragm.
- Optical display for direct setting of the dosed amount as well as other operational parameters
- Savings on chemical consumption
- Savings on manpower for maintenance, monitoring and re-calibration
- Short payback time

