

CLIMBING OUT OF PRESSURE PROBLEMS IN LOCAL WATER DISTRIBUTION



Roland Kainz, head engineer of the Rottal Water Supply Association (ZWR), says the Demand Driven Distribution pump control system from Grundfos has solved ZWR's water supply challenges in the Bavarian countryside.

THE SITUATION

The company supplying drinking water to customers around Rottal in Lower Bavaria, Germany, faced a challenge. The Rottal Water Supply Association (Zweckverband Wasserversorgung Rottal – ZWR) serves some 6000 properties along 275 square kilometres of green, rolling hills.

Its pumping stations were 25 years old. The “old-fashioned,” inefficient pumps and motors were not the only challenges, however.

“The landscape here is a bit hilly. The pressure is always poor in the highest places,” says Roland Kainz, ZWR’s head engineer. “The problem was that we had large pressure surges and quite a few complete failures. It was either due to air in the pipes or overload. The water simply didn’t come. So we decided we needed a new pump system.”

“Grundfos has seen to it that we operate reliably, with the appropriate pressure and a stable supply. The system is more maintenance-free, more dependable and energy-efficient.”

- Roland Kainz, head engineer of the Rottal Water Supply Association (ZWR)



Günter Meisl, chief technician at ZWR, makes his daily rounds at the main pumping station in Wolkertsham with the Grundfos Demand Driven Distribution system CU controller.

THE SOLUTION

Kainz contacted Patrick Link-Walter, Senior Sales Engineer of Grundfos GmbH, to explore how ZWR could optimise its system. After thorough consultation, Patrick suggested installing Demand Driven Distribution (DDD) from Grundfos.

Using pressure transducers known as XiLog units at two critical points in Rottal's water distribution network, pressure values are measured and sent to a DDD controller via GSM network. The controller ensures optimum pressure. By gradually ramping-up and ramping-down pressure, it reduces water hammer. This puts less stress on the piping, ultimately reducing maintenance costs and water loss.

"We did a trial run with the XiLog sensor," says Roland Kainz. "The trial showed that this system improves the pressure changes – or rather, it reduces them." It keeps the pressure constant in the critical points, where stable pressure is most important, he says "So we implemented it."

ZWR installed a Grundfos Hydro MPC-E 5 CRIE 10-9 booster system at the main station in Wolkertsham and a Hydro MPC-E 4 CRIE 10-6 system at the downstream Opping pumping station. A Grundfos CU 354 controller is the heart of the DDD operation.

Topic: Demand Driven Distribution for water supply

Location: Rottal, Germany

Company: Zweckverband Wasserversorgung Rottal (ZWR)



Roland Kainz checks the XiLog pressure sensor at the downstream Opping pumping station. It sends data via GSM to the DDD controller in Wolkertsham.

THE OUTCOME

The results were immediate, Roland Kainz says. “The system works well. The CU is perfect. It just works,” he says with a smile.

“The CU gets information from the XiLog sensors. So at night when demand goes down, it lowers the pressure, and if the need arises, it is increased.” This means less strain on the network, reducing water loss, he adds. “And it also saves energy, of course.

”Due to a recent installation of a new SCADA system, Kainz can only make an estimate on current savings, but based on analyses and current figures, he estimates ZWR is saving about 30% energy with the DDD system.

“I’m proud of the good solution that we’ve found jointly with Grundfos,” he says. “Grundfos has seen to it that we operate reliably, with the appropriate pressure and a stable supply. The advantages are that the system is more maintenance-free, more dependable and of course, energy-efficient.”

GRUNDFOS SUPPLIED:

To learn more about the Demand Driven Distribution system Grundfos supplied to ZWR – including booster sets, controller, sensors and more – [visit our pages about water distribution.](#)

Video