



Ultrafiltration plant in Roetgen waterworks

Germany's biggest ultrafiltration plant is operated by WAG Nordeifel in Roetgen. Following extensive testing, the company decided to construct a new UF plant as a prefiltering stage. The reservoir water is now treated in two stages.

The first stage separates out bacteria, viruses and micro-organisms. The filtered water

then passes through the second stage for deacidifying, hardening and reduction of manganese. A further UF membrane stage is used to treat the backwash water. There is regular backwashing with chemical-free filtrate or with caustic soda and sulphuric acid. The main membrane plant consists of 12 hydraulically optimised skids.

More than 25,000 cycles p.a. – thanks to pneumatics

The ultimate high performance plant, with up to 144,000 m³ of treated potable water per day, using a filter surface area of approximately 70,000 m²: only with pneumatics is this technically and economically feasible. One treatment cycle, consisting of filtering and backwashing, takes about 30 minutes. That makes more than 25,000 cycles per year.





Festo as a partner for operators, planners and plant engineers

- Very close collaboration with the plant operator and the planning company in the initial design phase
- Consultation and presentation of the automation solution
- Support in designing the layout of the compressed air network and in estimating consumption levels

- Definition of the plant standards for the pneumatic valve and actuation technology
- Calculating the actuation characteristics for valves

Pneumatic systems rise to the challenge in areas of:

- High switching frequency about 25,000 open/close actuations annually
- Short response times between 2 - 3 seconds to reduce back-wash times

The technical solution

- Valve terminals with Profibus DP communicating with the PCS7-400 from Siemens
- 27 valve terminals CPX/MPA1+2, double pilot valves, configuration with 5 to 24 solenoid valves
- 27 fully assembled and tested filter-regulator service units
- Accessories such as QS fittings, pressure switches, on-off valves

