



## 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 m<sup>3</sup> of treated potable water per day, using a filter surface area of approximately 70,000 m<sup>2</sup>: 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

