

References

SIMATIC ET 200S with PROFINET

Peterstaler Mineralquellen, Germany – Bottling of mineral water

Requirements

Peterstaler Mineralquellen GmbH operates bottling plants at two sites in the Black Forest for their mineral water and non-alcoholic beverages. To improve the flexibility and capacity utilization of these two plants, they have been connected together using pipes in a project that is unique in this sector. Great emphasis was placed here on the communication between the two head stations and the substations along the route that had to be suitable for automation and telephone purposes.

Solution

The decision was in favor of an integrated, distributed solution using PROFINET. A single-mode fiber-optic network based on Ethernet (14 km distance) forms the backbone for the communication for the automation systems and the Voice-over-IP between the two sites. The mainstays of the automation solution are PROFINET-capable S7-300 controllers that are connected to the fiber-optic backbone via switches. The actuators and sensors of the field level (such as valve terminals) are connected to the integrated PROFINET interface via SIMATIC ET 200S distributed I/O devices.

Benefits

Thanks to the integral PROFINET functionality in the controllers of the S7-300 range as well as the SIMATIC ET 200S I/O, the automation devices could be directly connected to the Ethernet-based single-mode network. When programming with SIMATIC STEP 7, there is no distinction between accessing an I/O device such as SIMATIC ET 200S over PROFIBUS or PROFINET, so the expertise gained by the customer with PROFIBUS was safeguarded.

The important advantage of PROFINET over standard Ethernet according to the customer are the cycle times of between 5 ms and 10 ms that can be achieved over the real-time channel without which the extremely demanding closed-loop control tasks of this application would not have been possible over large distances.

"We are very satisfied with this solution: Transporting the mineral water over the hill has been problem-free since then. Transport by truck became unnecessary and this reduced the associated pollutant emission, which in turn was evaluated very positively in our current environment protection audit according to ISO 14001."

Wolfgang Sum, Manager

