



Direct Sensors™ inside the Grundfos AQpure enables a compact and cost-effective monitoring and control solution of water treatment for drinking water supplies

The situation

Grundfos AQpure is an ultrafiltration based water treatment system, that produces drinking water quality by filtering bacteria, viruses and particles from raw source water.

Grundfos AQpure is delivered pre-fabricated and pre-wired, almost as a plug-and-play water treatment system. Operation costs are reduced to a minimum, and Grundfos AQpure offers low consumption of energy and chemicals, long lifetime of the UF membrane (pore size of 0.03 micrometer) and other wear parts, and without the need for a full-time operator.

All of the above requires sensors – lots of sensors. Flow, temperature and pressure sensors to secure the continued operation of the system, incl. cleaning and backwash of the filters and the related warnings and alarms. Also measurement of the volume of water being used and being produced by the system. Hence GRUNDFOS AQpure development team was in need for compact and cost effective sensors. In particular flow sensors without any moving parts for the operation in harsh environment with high

Topic:

Water treatment

Location:

The developing world – in particular Africa.

Company:

Grundfos

temperatures and humidity. And a new utilization of Direct Sensors™ using a relative pressure sensor for monitoring and control of the level in a tank.

The Grundfos solution

The basic characteristics of the sensor are: without any moving parts, highly compact and cost-effective. The low voltage sensors means a considerable electricity reduction compared to competing systems. VFS, RPS and RPI sensors have been installed. Pressure monitoring over several filters and membrane, pump flow control and system maintenance done via VFS, RPS and RPI Direct Sensors™ from GRUNDFOS.

The outcome

Depending on the water quality, AQpure comes in various configurations utilizing 11 modules. The 11 modules and their integration of sensors ensure a simple and flexible system with high uptime, high performance/flowrates of water and low maintenance. GRUNDFOS AQpure with Direct Sensors™ inside is marketed and sold in many countries around the globe.

Quote:

“...The fact that the sensors are connected directly into the pumps ensures a compact, but also cost-effective solution with our own products. The sensors are used for controlling, monitoring and prevention. In case of more serious failure, we always have access to all sensor data to be able to troubleshoot and find the root cause of the problem .”

Sébastien D’Antonio, Senior Project Manager.

Additional images

