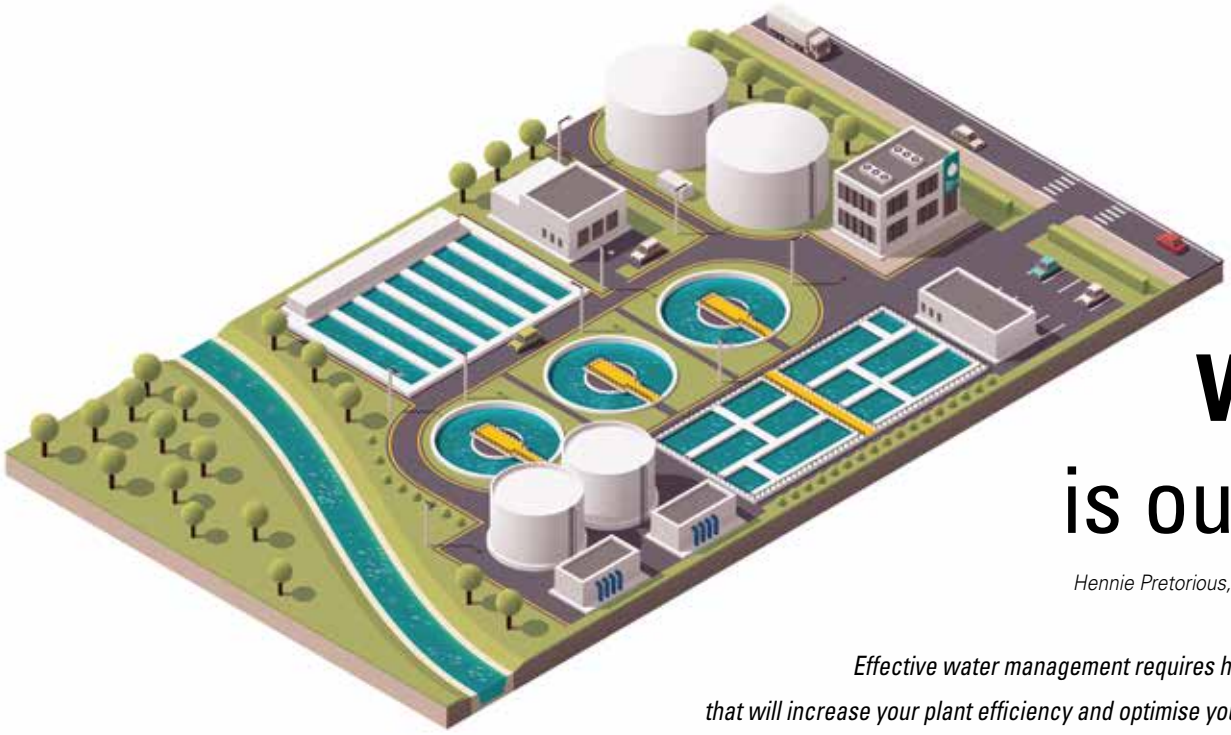


Water is our Life

Hennie Pretorious, Endress+Hauser

Effective water management requires high-quality solutions that will increase your plant efficiency and optimise your operational costs.

Water is a vital resource and therefore needs to be managed carefully throughout the complete process. Endress+Hauser assists with technical and process support having expert experience and knowledge of the standards within the water and wastewater industry.

Endress+Hauser South Africa (referred to in this article as the company) is well established in all areas of water and wastewater treatment with a network of global support. These competencies include monitoring the quality of water bodies, drinking water treatment and distribution thereof. As the various regions in South Africa are running out of surface water to use for drinking water, coastal towns and cities will turn to desalination of sea water where inland towns and cities will turn to water-reuse to supplement their water supply.

Membrane filtration

The use of Membrane filtration is key to these water supply solutions and the company has proved to be a reliable partner to various membrane plant builders whether in desalination or water re-use. Further to these, the company has a large footprint in treatment and optimisation of municipal as well as industrial waste water. Robust, reliable and user friendly measurement technology is essential to the reliable operations of water works and sewage treatment. It offers a modern portfolio of measurement devices that makes it possible for you to find the ideal solution for all your applications from one single source.

Platform technologies such as Proline (flow), Liquiline (liquid analysis) and Cerabar (pressure) offer a host of benefits for planners, system integrators, operators, as well as service personnel. These include reduced complexity due to standardisation of similar measuring points, easy multiplication of device settings for comparable measuring points reducing time, potential for errors and they optimise stock keeping of modular replacement parts for device platforms.

Early project stage

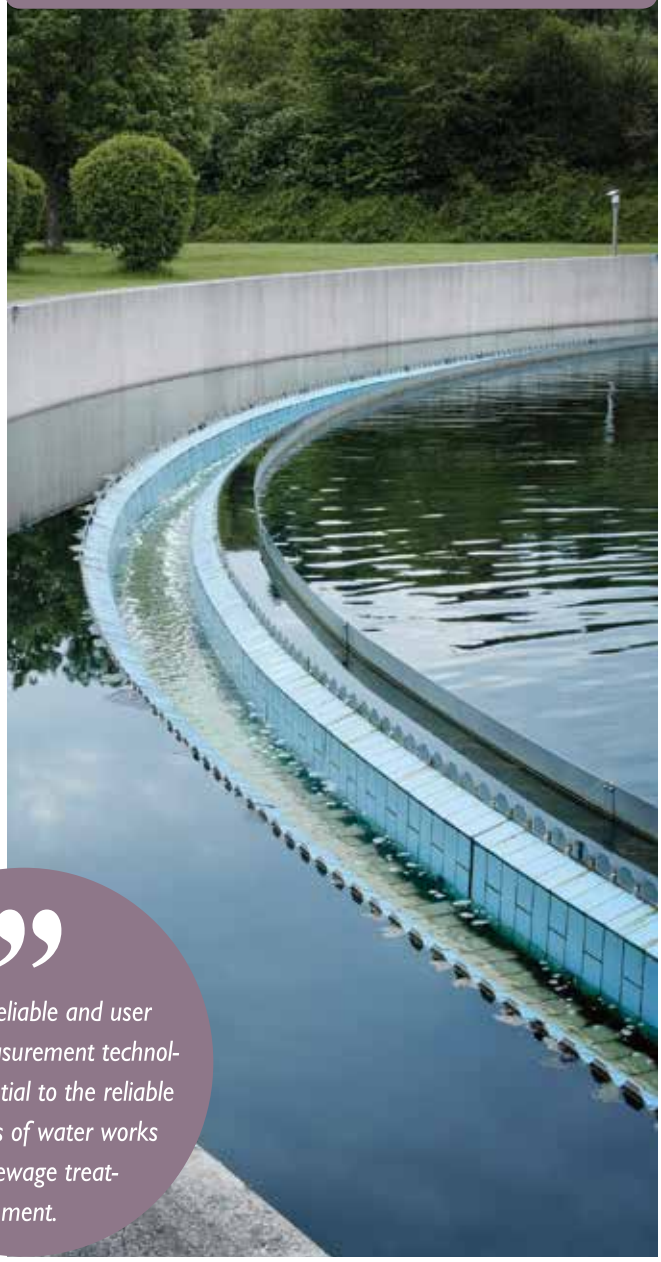
The correct selection of your measuring points starts at the design stage of your project. As part of the company's industry focus and expertise, assistance and consulting services can be supplied early in the project stages. This will assist in selecting the correct and most cost effective solution from their extensive and flexible product basket. Included is the selection of the most suited measurement principal to a particular process as well as selecting the correct segmented product according to required features and capabilities, such as advanced diagnostics. The complete solution to the loop by offering surge arresters, power supplies and displays, can be provided. Smart system components such as data managers and loggers complete the measurement basket and allow smart solutions in respect of data storage, individual preference for I/O types, quantities and linking to various communication protocols. These include HART, WirelessHART, PROFIBUS, FOUNDATION FIELDBUS and Ethernet.

Energy consumption in wastewater treatment

As energy consumption forms a large part of the overall operating cost of a wastewater treatment plant, it is of utmost importance to monitor this continuously. The transparent presentation of energy consumption needs to be broken down into individual processes in order to benchmark the energy optimisation. Endress+Hauser has developed a smart energy monitoring solution for sewage treatment plants based on the advanced and improved Memograph RSG45. As an energy manager, the RSG45 collects, calculates and visualises the defined key performance indicators of the plant. In conjunction with the intuitive Field Data Manager software (FDM), remote access and further processing becomes very easy to implement. Energy monitoring offers:

- Optimised plant performance
- Increased pump efficiency
- Monitoring electricity generation (where biogas is used)
- Improved aeration performance
- Customised KPIs

Biological wastewater treatment is a core process in any modern sewage processing plant. It involves the decomposition of organic loads and nutrients that can cause eutrophication in downstream water bodies. The aeration of the aerobic treatment step is however a major



cost factor, with at least 50% of electrical energy is consumed alone. It has already been proven by many operators that a strategically implemented aeration control system can significantly improve both effluent discharge values as well as energy consumption. In many places phosphate precipitation is also necessary but this also represents a significant cost factor. Load-sensitive phosphate precipitation is an effective solution for cost efficiency and safe phosphate discharge levels.

The company's load sensitive controller, the Liquiline Control CDC81, using ammonia and nitrate levels in the process, aims to achieve safe effluent levels as a first priority and also reduce energy consumption significantly. The controller can be rapidly commissioned and supplies you with identical HMIs for up to three biological treatment zones. It provides you with real time control, fieldbus communication, failure safe modes according to process impact, event and alarm messaging as well as data logging. It is able to control and optimise continuous aeration, intermittent aeration as well as precipitant dosing for phosphate removal.

*Endress+Hauser South Africa will be launching the **LIQUILINE Control CDC81** at WISA 2016 in Durban from 15 to 19 May 2016.*

Robust, reliable and user friendly measurement technology is essential to the reliable operations of water works and sewage treatment.

When you need assistance, the company's 24/7 service helpline is there to support you and give you required assistance in order to minimise your downtime. This can be telephonic assistance or on-site diagnostics or repair.

Further support services offered are engineering, commissioning, traceable calibrations, maintenance and expert product training. When you want to optimise your processes based on the services provided, the company can offer further assistance. This includes maintenance and calibration management, maintenance consulting as well as calibration consulting.

Only a clear picture and detailed knowledge of the installed instrument base can act as a solid foundation for a predictive maintenance and optimising strategy for your plant. Whether you need to find information concerning spare parts, verify software versions, trace instrument history records on the basis of key events or view the plant database with its installed instruments – the data must be up to date and rapidly available. W@M Lifecycle management supports these operational matters and can assume strategic tasks. The first step for this implementation is an Installed Base Audit in order to capture all the process equipment and instrumentation. Your main benefits will be:

- Full information traceability of your field instrumentation once the audit is complete
- Information at your fingertips 24/7 – highly valuable in urgent situations
- Efficiency gains in your operations through the significant improvement of your asset information management

Even third party devices can be included but the information update will be a manual process.

Conclusion

Plant managers have a continuous struggle to improve their water processes and reduce operational costs of their plants. With this are the challenges faced in increasing their plant safety and availability. Count on the People for Process Automation to optimise your water process and support you globally as a long-term partner.

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