Services

Complete solutions for wastewater processes Reducing effluent discharge costs and minimising your overheads!





Online analysis: necessity, not luxury

Increasingly stringent regulations and consent requirements are continually being put in place to maximise compliance by industrial companies - and minimise harmful discharges to the environment.

The typical consent parameters include pH, temperature, organic load and suspended solids. Any breach of these consent limits can prove costly to offending companies. And, with the Environmental Liability Directive that came into force on 1 March 2009, the 'polluter pays' principle holds those responsible for causing damage liable for remedying it. As a consequence, the need for accurate, effective and traceable measurement has never been so apparent.

At the very least, having an on-site sampler will ensure that you always have a representative sample to give to the trade effluent officer. Furthermore, continuous monitoring of these key consent parameters, along with remote alarm triggering, ensures that you are always in the picture and able to react quickly.



Our new Liquiline platform with Ethernet connectivity means that you can even view your consent measurements from home or office - and be alerted immediately in event of an incident. We will work with you to design a bespoke effluent monitoring and control system to give you complete peace of mind.

Milking cost savings from waste reduction



A waste reduction programme at a Cumbrian dairy reaped cost-saving benefits to the tune of £80,000 in the first year of operation, minimising effluent charges and slashing milk wastage by 25%!

Simple sampling

Our Liquistation CSF48 stationary sampler and the portable Liquiport 2010 CSP44 offer the maximum in simple yet reliable sampling.

Based on Liquiline and Memosens digital technology, the Liquistation and Liquiport go above and beyond the call of duty with the option to be used as complete measuring stations.

Focus on flexibility and ease of use

The core principal of our new sampler platform is centred around flexibility and ease of use. Whatever the task and however demanding, our simple menu-quided intuitive interface will guide you through, step by step. Better still, samplers can easily be extended into measuring stations without the need for additional transmitters! Thanks to the flexible electronics and expansion slots, additional inputs can be easily added. And, with automatic detection software, they are operational with immediate effect!

Perfect sample preparation

Achieving a representative sample is the first and most important step in any liquid analysis. However, proper sample maintenance is also critical. The innovative power supply and cooling system ensure that the samples are not exposed to any fluctuations in temperature and therefore cannot undergo any biological changes.

User-friendly, simple operation

The new Liquistation sampler features the same clearly arranged operating concept as the rest of the Liquiline and Memosens devices. The menu is intuitive and simple to allow fast navigation and the large display guides users step-by-step through the process. The sampling programs provide maximum flexibility and cater for



all requirements including time and flow controlled sampling and eventtriggered programs.

The Liquistation CSF48 stationary and Liquiport CSP44 portable sampling devices are both MCERTS certified and can be specified in a range of bottle configurations. Cost-effective and reliable, the patented medium detection system guarantees accurate sampling and dosing volumes. Better still, its integrated datalogger and range of communication options mean that you can configure a complete system to your exact specifications.



Continuous monitoring of consent parameters

Memosens digital sensors and Liquiline multi-parameter transmitters are a winning combination when it comes to the reliable measurement of consent parameters. Backed by a range of optical sensors and analysers covering BOD, COD and TOC, we really can't be beaten!

The use of a simple pH control loop as part of a dosing system ensures that your effluent is within consent and eliminates the possibility of costly fines - not to mention hefty billing charges. For example, where post CIP effluent may be above the typical consent maximum of pH10, appropriate monitoring and dosing prior to discharge ensures compliance.

Furthermore, using Memosens technology offers the added benefits of enabling maintenance and calibration away from the measuring point. Pre-calibrated sensors can be easily exchanged, thus minimising both maintenance effort and downtime.

The inductive non-contact signal eliminates all of the problems of analogue measurement such as moisture ingress that leads to measurement distortion. Better still, the storage of calibration and process data in the sensor head enables simple interrogation using the Liquiline CM44 transmitter, making it extremely useful for predictive maintenance.

Our Liquiline CM44 digital platform enables up to eight measurements in a single device with any combination of sensors. Expansion is possible at any time by simply adding modules so that all of your effluent monitoring parameters can be measured with a single device! Parameters include pH, oxygen, conductivity, nitrate and SAC, turbidity and ammonium.

Digital communication can be made via PROFIBUS DP (PA Profile 3.02 conforming), Modbus RS485 or Modbus TCP. Furthermore, the integrated web server enables use of Ethernet with standard web browsers such as Internet Explorer and Firefox so that measured values can be easily viewed remotely using standard WiFi/ WLAN.



Memosens allows laboratory calibration







Stamolys CA71COD analyser

BOD, TOC and COD analysers for continuous monitoring of organic load

Online analysis of the sum parameters for organic loading offers significant advantages over the 'grab sample' technique using laboratory analysis. Realtime monitoring of consented parameters will reveal peaks and spikes that can be missed by composite sample analysis. By activating alarm set points, you can ensure that should any limits be breached, you'll know about it quickly, enabling swift action to be taken. Endress+Hauser offers continuous analysers for total organic carbon (TOC) and biochemical oxygen demand (BOD) to meet your exacting requirements.

Online COD - no mercury required!

Our CA71COD analyser is the first online analyser for chemical oxygen demand that uses standard dichromate chemistry in accordance with DIN38409 H41 and GB 11914-89. This provides almost real-time measurement of this vital consent parameter – but without mercury!

The ability to automate this analysis minimises personnel effort and overall cost per test. What's more, the digestion period can be configured from 10 minutes, allowing optimum measurement cycles if your organics are more readily oxidised and therefore don't require the full two-hour period. This offers a near-continuous measurement for a clearer overview of your effluent profile.

Early detection of product loss in breweries and dairies

For breweries or dairies, product loss is an important consideration as it has a significant impact on



Memograph CVM40 transmitter and data manager with OUSAF11 optical sensor

site profitability. Endress+Hauser's optical OUSAF11 sensor offers early detection of product in the effluent stream. The rapid response of the near infrared sensor enables fast action to be taken in the event any measurement deviations in order to minimise product loss or protect the wastewater treatment plant from overload. The effectiveness of the device, combined with its low cost means that return on investment can be achieved very quickly. In most cases upwards of 1% of annual production can be saved - and that's in addition to effluent cost savings!





The importance of aeration optimisation

Electricity costs for running aeration air compressors account for approximately 70% of total energy usage in a wasterwater plant. Aeration processes in a typical plant are often operated in a time-based manner or using only simple oxygen control. However, if the blowers are controlled in accordance with the actual load, the potential to reduce energy consumption and operating costs is enormous!

Endress+Hauser's Liquicontrol CDC80 system for load-based aeration allows you to tap into this cost-saving potential, offering optimum efficiency in your existing system with regard to time, staffing, energy and materials.

Intelligent ammonium control Liquicontrol minimises energyintensive aeration times based on the ammonium load. Ammonium limits are defined in accordance with the requirements of your wastewater treatment plant. The aeration process runs until the ammonium value has reached the lower limit. Maximum process control is our priority here, with minimum times for aeration and continuous monitoring of the ammonium content.

Oxygen control with automatic load detection and adjustment

Liquicontrol's oxygen control function controls the blowers in the aeration phase based on ammonium measurements. It also determines the oxygen set point value which is adjusted dynamically depending on the ammonium load. This means that the plant can be perfectly attuned to different load situations.







Taking aeration optimisation to a new level, our new Liquicontrol CDC80 system can be integrated into existing Siemens and Rockwell Automation PLCs or used as a standalone unit in a cabinet. The package involves a combination of dissolved oxygen, ammonium and nitrate measurements for:

- Load-based control
- Oxygen control with automatic load detection and concentration adjustment
- Simultaneous control of multiple aeration tanks.
- Single stand alone solution and software package for Siemens or Rockwell Automation integration
- Remote access with alarm value for plausible NH4/NO3 and DO values
- Remote controller setup to optimise aeration
- Selector switch allows switching from automatic to manual operation at any time
- Optional dosing of phosphate precipitants
- Real cost savings for fast return on investment

Working with you and your process, our specialists can put together a bespoke system, tailored specifically to your treatment process to reduce your effluent costs.

Panels and kiosks: the complete solution

We know that monitoring of key analytical parameters is a vital necessity to prevent consent breach and minimise effluent charges. Taking simple monitoring to the next level, Endress+Hauser can give you a fully customised solution to meet your effluent monitoring requirements in full.

A total kiosk solution, containing all required instrumentation with custom designed pipework, isolation valves and cleaning systems, can be designed and built to meet your requirements. Whether it is to get a handle on your consent parameters or simply for adopting Best Available Technology for ISO14001 compliance, Endress+Hauser will provide you with the optimum solution.

Our highly experienced team can project manage the entire process, giving you a complete solution to your exact requirements. All of the design, build and installation can be taken care of, followed by commissioning by one of our skilled service engineers. For a total solution and real peace of mind, we back this up with a complete service contract comprising site visits, recalibrations and replenishment of consumables.

We will work with you at every stage to help you improve your effluent monitoring capability and minimise your overheads.





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