

Clean water - We take care of it for you.



Intelligent Measurement and Control Technology for Wastewater Treatment Plants since 1978

- ≡ BioCon Biology Control System - The intelligent tool for your safe continuous operation
- ≡ TAS Automatic Sludge Water Discharge System - Reducing sludge with a cleaning free technology
- ≡ OSF Real-Time Sampling Device - The low maintenance solution

Technology for a livable environment

Ideal for your wastewater treatment plant

THE WASTEWATER OPTIMISATION COMPANY

Kleine is one of the most renowned German companies for a holistic and economic optimization of wastewater treatment plants. To protect the climate and to save resources are in our eyes not only the biggest challenges of the future. They also impact our daily work and drive us to find new innovative solutions that make wastewater treatment plants safer and more efficient.

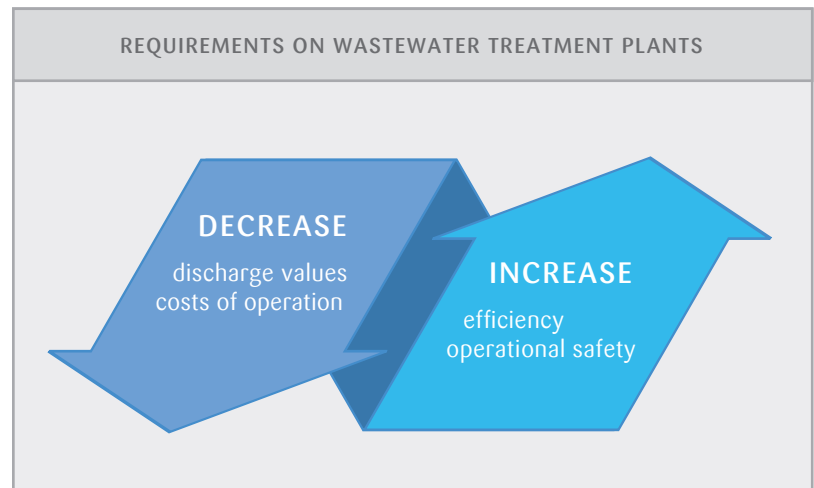
With our measuring and control technologies we support wastewater treatment plants to make their contribution to the common objective "clean water". Precisely this means an improved economic situation and a higher operational safety of your wastewater treatment plant.

For this we identify with the individual requirements of your wastewater treatment plant which we transfer into holistic solutions consisting of product components and services. We therefore do not see us solely as a traditional product supplier but rather as a consulting and supporting partner which helps in all project phases – comprehensively and individually.

EFFICIENT SOLUTIONS

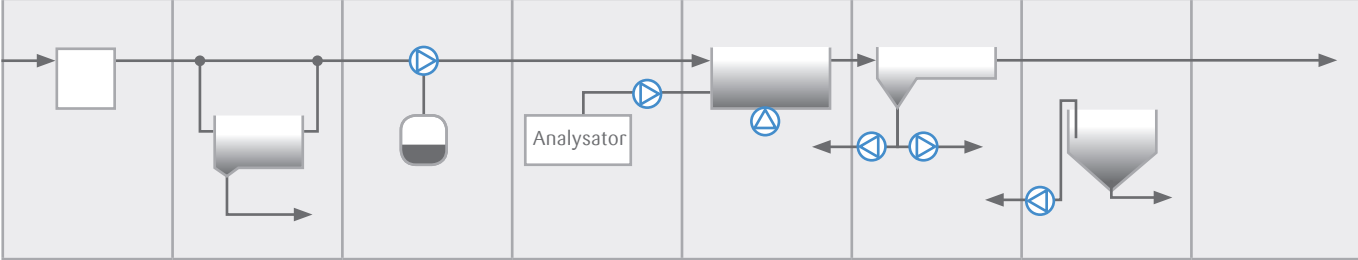
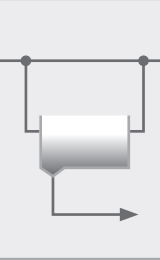
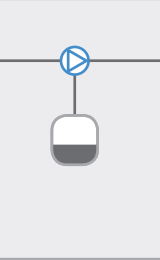
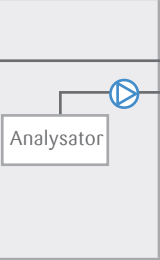
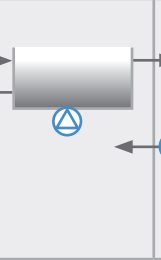
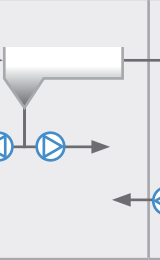

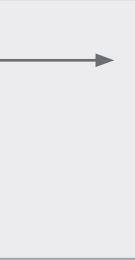
Our system solutions are focused on an automatic, safe process, and a sustainable reduction of discharge values and costs of operation – without expensive changes on existing parts of your plant.

With 40 years of experience in the wastewater treatment sector Kleine Solutions supports your business with innovative products, a holistic development, individual solutions, a reliable installation and a personal support service.



Solutions for a safe, efficient and economic wastewater treatment process

Overview of the whole process and the measurement and control solutions of KLEINE

FEED	PRIMARY SEDIMENTATION	PRO-PORTIONING	FILTRATE RECOVERY	AERATION TANK	SECONDARY SEDIMENTATION	SLUDGE THICKENING	DISCHARGE
							
	VOKUS	BIOCON	OSF	BIOCON	BIOCON	TAS	BIOCON
	Control of the primary sludge discharge Discharge of primary sludge depending on thickening degree, resulting in better efficiency of feeding and operation of the digestion tank	Biology Control Increased biological phosphate elimination and decreased need for coagulants	Real-time sampling device Cheap, low maintenance and energy-efficient possibility to provide wastewater samples for on-line measuring devices	Biology Control Increased biological degradation and less energy consumption for aeration units	Biology Control Improved sludge characteristics and sludge thickening process	TAS Automatic Sludge Water Discharge System Increased thickening and decreased volume of the sludge in the following sludge treatment by targeted discharge of sludge water	Biology Control Increased operations stability and safety with sustainably decreased discharge values

BioCon Biology Control System

The intelligent tool for your safe continuous operation

WHY TO USE BIOCON?

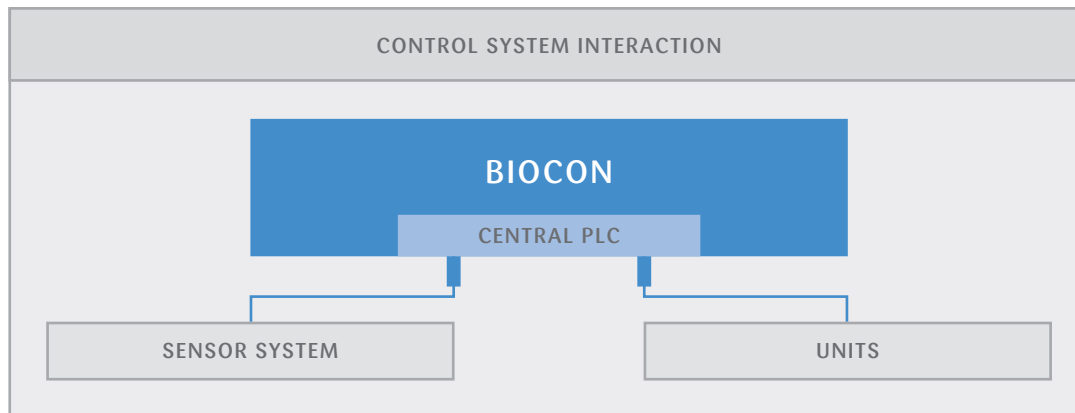
- ≡ Safe continuous operation
- ≡ Automatic adjustments under changing conditions
- ≡ Less operating costs
- ≡ Stabilized cleaning performance
- ≡ Improved discharge values
- ≡ Less energy consumption
- ≡ Less costs for coagulants
- ≡ Increased transparency of the whole process
- ≡ Perfect sludge conditions for MBR usage

WHERE TO USE BIOCON

- ≡ Easy implementation or re-fit on any wastewater treatment plant with biological cleaning process

BENEFITS OF BIOCON

- ≡ Highest possible economic efficiency together with an operational safety for the whole cleaning process



BioCon controls the entire process.

HOW BIOCON WORKS

- ≡ Your individual objectives in combination with the automatically controlled cleaning process are realized considering the best economic output and the highest safety for the plant
- ≡ BioCon combines different processes of the biological cleaning process to a balanced control strategy
- ≡ Discharge values are constantly aligned with the overall objectives



You define your objectives. BioCon balances them to a holistic control strategy.

CONTROL UNITS	
<p>AERATION</p> <p>Controls the nitrification and denitrification depending on your demand and degree of pollution</p>	<p>SLUDGE</p> <p>Controls recirculating and surplus sludge including MBR solutions</p>
<p>ENERGY</p> <p>Controls the biologic cleaning steps in an energy efficient way</p>	<p>PHOSPHOR</p> <p>Eliminates phosphor automatically dependent on your demand and degree of pollution</p>

All BioCon components can be chosen separately as required. The components interlink and BioCon combines them into a holistic controls strategy.

TAS Automatic Sludge Water Discharge System

Reducing sludge with a cleaning free technology

WHY TO USE TAS

The ultrasonic sensor within TAS facilitates a targeted and effective discharge of sludge water.

- ≡ Sludge water zones within thickener tanks lead to a lower thickening degree achieved by the thickening process
- ≡ The sludge water zones result in high costs for further sludge processing

WHERE TO USE TAS

- ≡ in nearly all types of sludge e.g. primary sludge, surplus sludge or digested sludge
- ≡ in municipal as well as industrial wastewater treatment plants

BENEFITS OF TAS

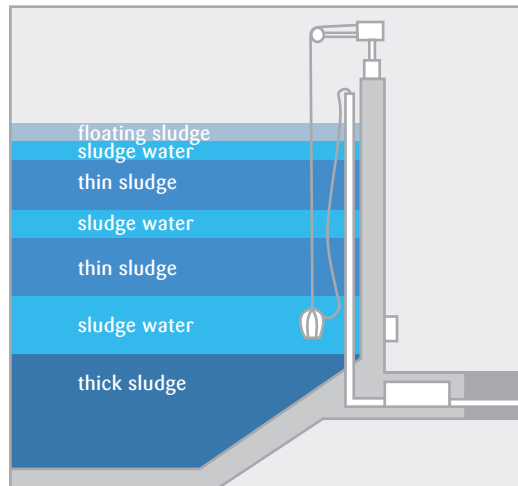
- ≡ improved degree of sludge thickening
- ≡ increased storage capacity of the sludge tank
- ≡ obtains significant cost savings associated with further sludge processing, subsequent sludge transport or sludge disposal

HOW TAS WORKS

- ≡ suction unit with ultrasonic sensor
- ≡ long-term operation without cleaning, maintenance and low wear and tear



Suction entity, swiveling boom with covered gear box and control unit with touchscreen



Principle of a thickener tank

OSF - Real-Time Sampling Device for wastewater treatment plants

The low maintenance solution

WHY TO USE OSF

The OSF real-time sampling device provides a low-cost and effective method of supplying filtrate for all online measuring devices on sewage treatment plants.

- ≡ filtrate required for online measuring devices can be obtained directly from the tank
- ≡ it facilitates to separate and pump very small filtrate amounts
- ≡ quick and easy cleaning

WHERE TO USE OSF

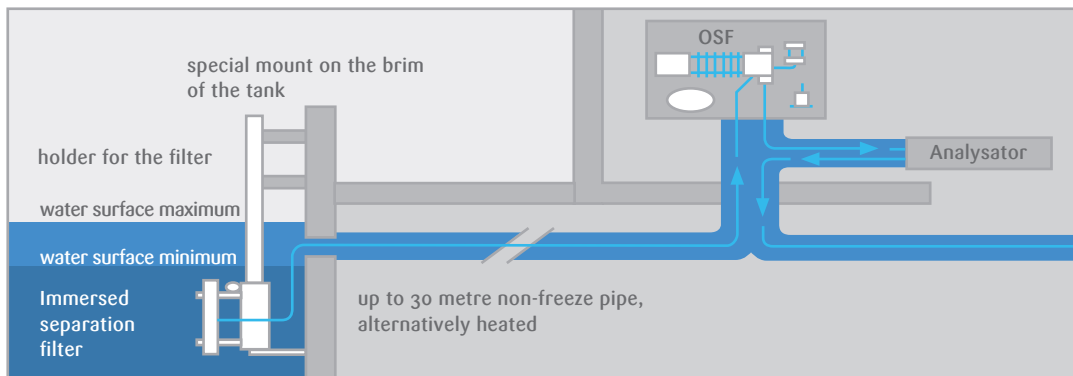
- ≡ for all online measuring devices on wastewater treatment plants

BENEFITS OF OSF

- ≡ reliable and low-cost method of supplying filtrate for all online measuring devices

HOW OSF WORKS

- ≡ the separator is immersed from its mount on the brim of the tank into the medium that is to be measured
- ≡ the separator gains solid-free filtrate
- ≡ transport of the sample to the measuring device with a magnetic dosing pump



OSF is installed on the brim of the tank with a holder that is easy to mount.



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