SEEPEX.
ALL THINGS FLOW

EVERYTHING UNDER CONTROL
CO – CONTROL SYSTEMS

CO

INTEGRATED APPROACH.

ABOUT US
PUMPING SOLUTIONS SINCE 1972

PRODUCTS
- Progressive cavity pumps
- Macerators
- Control systems

CORE COMPETENCIES
- Comprehensive consulting
- First-class service
- Customer-specific solutions
- Continuous innovation
- Modular pump system

EMPLOYEES
OVER 700 WORLDWIDE

SEEPEX is a leading global specialist in pump technologies. Our progressive cavity pumps, macerators and control systems are used wherever thin to highly viscous, abrasive or aggressive media is pumped requiring minimal pulsations with the highest precision.

Thanks to our modular system with market-specific product groups and high-performance ranges, SEEPEX finds the optimal solution for every industry and every application – even for extremely challenging applications.

SEEPEX is far more than just a pump manufacturer. The highly qualified engineers and technicians at SEEPEX consider every project from an integrated perspective and are able to apply their technical knowledge to deliver individual and comprehensive advice to customers from all branches of industry.

Furthermore, SEEPEX offers a wide range of service programs, which ensure long-term value, optimal operation and minimize life cycle costs of the pump.

SEEPEX was founded in Bottrop in 1972. Today the company is represented in over 70 countries and has over 700 employees worldwide.

OPTIMALLY COORDINATED.

INDUSTRIES

- Food and beverage
- Environmental engineering
- Potable water
- Renewable energies
- Pulp and paper
- Oil, gas and petrochemicals
- Chemical
- Pharmaceuticals and personal care
- Additional markets

ABBREVIATIONS

- **SLCO** = **Sl**udge **C**onditioning
- **FPPU** = **F**ilter **P**ress **P**ump Feeding
- **BGDC** = **B**iogas **D**osing **C**ontrol
- **MPPC** = **M**ulti **P**hase **P**ump **C**ontrol
- **LVCL** = **L**evel **C**ontro**l**
- **DOSC** = **Dos**ing **C**ontrol
- **SDP** = **S**mart **D**osing **P**ump

SEEPEX control systems (CO) are high-performance systems for the automated control of pumping operations. They are used specifically for process optimization, monitoring and management functions and they are custom-designed for integration into the customers' processes. SEEPEX control systems optimize customer processes by increasing repeatability, enhancing reliability and reducing life cycle costs.

Standardized control modules are available for metering and dosing systems, or as protection against overpressure and dry running. Furthermore, SEEPEX can develop customer-specific control solutions, from individual components to complex systems complete with process visualization.

Whether standardized or customer-specific: from development through to commissioning and service, we are your partner in process optimization.

BENEFITS AND PROPERTIES

- Custom-fit solutions that will integrate into existing plants
- Optimization of pump performance
- Reduced life cycle costs
- Standardized and custom control functions
- Network-capable compact control systems
- Development of customer-specific solutions

With our customer-specific solutions, we can develop SEEPEX control systems for your applications. All you have to do is contact us.

SLCO DOSING CONTROL SYSTEM.

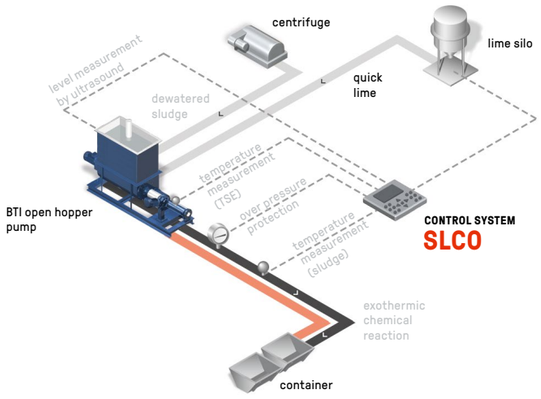
For conditioning sludge with quick lime, SEEPEX pumps are used to mix and pump dewatered sludge from centrifuges and belt filter presses. The SLCO control system has been specially developed for conditioning sewage sludge.

In this process, dewatered sludge is discharged into the pump hopper of a SEEPEX BTI pump (hopper with integrated bridge breaker). At the same time, lime is fed into the hopper of the pump via an adjustable screw dosing system and mixed in by the bridge breaker.

By conditioning dewatered sludge using quick lime, an exothermal reaction takes place, increasing the dry solids content as well as raising the pH value in order to kill pathogens. SEEPEX pumps mix and pump the conditioned sludge in a closed system, and optimize it e.g. for agricultural use.

BENEFITS

The SEEPEX SLCO controller regulates and monitors the pumps during lime stabilization, ensuring the correct ratio of quick lime to dewatered sludge is added and mixed within the pump. This ensures reliable sanitization and long-term stabilization. The various protection functions protect the pump and its components against overloading, and assure reliable operation.



APPLICATIONS

Conveyance and conditioning of sewage sludge

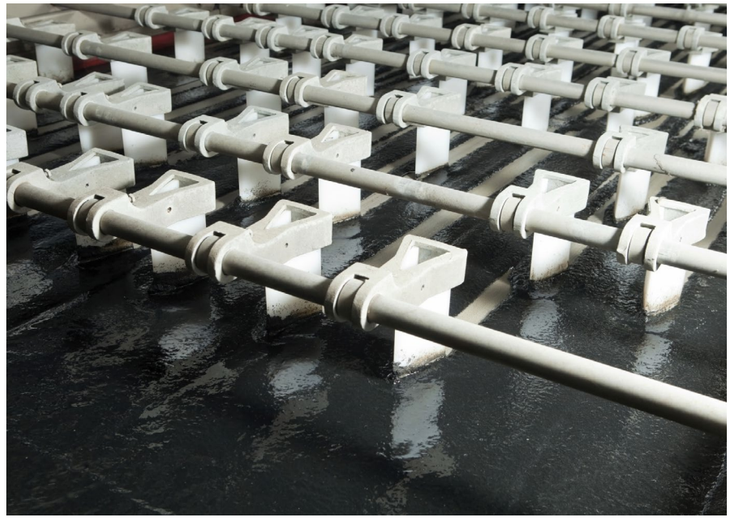
KEY FACTS

- Display: 3.5" TFT color
- Dimensions (LxWxH): 203 x 56 x 145 mm
- Protection class: IP65 (front)

FEATURES

- Intuative operation using process visualization
- Integrated recorder function makes easy process verification possible
- Level control in the pump hopper
- Monitoring of temperature in order to prevent excessive lime dosing

- Clearly structured display of operating and error messages
- Optional: Communication via conventional fieldbus systems
- Integrated resettable operating hours counter for each pump
- Dry running protection to protect the rotor and stator conveying elements
- Overpressure protection with freely adjustable cut-off pressure
- Various operating languages available



FPPU FILTER PRESS CHARGING SYSTEM.

With the combination of the FPPU filter press feeding system and pumps of the BN series, SEEPEX offers an intelligent system for feeding plate and frame filter presses in sludge dewatering applications.

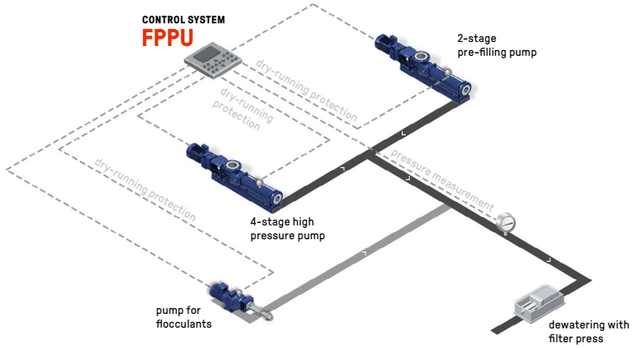
The FPPU control system optimizes the control and filling of plate and frame filter presses. The FPPU controller maximizes flow during the fill cycle and precisely controls pressure in the final compaction phase. Strict control over the process reduces overall cycle times and maximizes the dewatering capability of the press. The flow and pressure control system permits as many as 100 seperate flow vs. pressure set points during the process to achieve optimal dewatering with maximum process throughput.

If faster filter press cycle times are desired, the FPPU control system permits the use of a two pump system consisting of a single high-volume pump and a second smaller, high-pressure pump.

BENEFITS

The individual adjustment of the conveying capacity/pressure characteristic curve allows the capacity of the pump(s) to be optimally adapted to the sludge to be dewatered. This prevents premature compaction of the sludge on the filter cloths.

The FPPU control system enables plate and frame filter presses to be filled significantly more efficiently: the entire process of sludge dewatering is thus optimized. Dry running protection and overpressure protection are also integrated, which results in major advantages in terms of operating reliability.

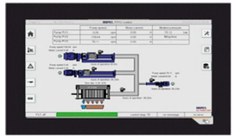


APPLICATIONS

Sludge dewatering with filter presses

KEY FACTS

- Display: 10.1" TFT color
- Dimensions (LxWxH): 276 x 51 x 172 mm
- Protection class: IP65 (Front)



FEATURES

- Simple operation through visual representation of the filling process
- Shorter filling times through optional pre-filling pump
- Addition of flocculants by a SEEPEX dosing pump
- Efficient filling through the use of individually adjustable performance curve
- Formulation memory for saving performance curves
- Integrated signal recorder allows simple process analysis

- Clearly structured display of operating and error messages
- Communication via conventional fieldbus systems optionally possible
- Integrated resettable operating hours counter for each pump
- Dry running protection to protect the rotor and stator conveying elements
- Overpressure protection with freely adjustable cut-off pressure
- Various operating languages available

MIXING AND DOSING CONTROL SYSTEM BGDC.

The BGDC controller is a dosing, mixing and pumping system specially designed for biogas generation.

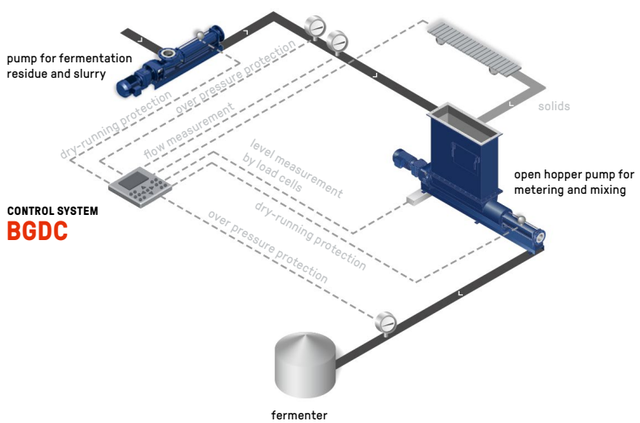
During biogas generation, organic materials are broken down by means of fermentation. The BGDC is designed for charging the fermenters of biogas plants, and controls dosing and mixing of liquids and solids.

In this process, a SEEPEX pump of the BN series transfers a constant flow rate of fermentation residues into the feed hopper of a SEEPEX open hopper pump. At the same time, solids are added into the hopper of the pump, e.g. via a screw conveyor. The mixing ratio can be individually adjusted by means of a factor. The filling level in the pump hopper is kept constant by means of a controller. To this end, the pump weight is continuously measured with the help of load cells. Fermentation residues and solids are mixed by the hopper screw, and subsequently pumped into the fermenter.

BENEFITS

The BGDC control system provides the customer with a dosing, mixing and pumping solution in a single system.

The pump media are ideally combined to achieve a predefined ratio, thoroughly mixed, and thus optimally prepared for the next stage of the process. The various protection functions ensure fault-free operation.



APPLICATIONS

Fermenter charging in biogas plants

KEY FACTS

- Display: 5.7" LC b/w
- Dimensions (LxWxH): 205 x 111 x 220 mm
- Protection class: IP65 (front)

FEATURES

- Convenient operation through process visualization
- Individually adjustable mixing ratio of liquids and solids
- Level control in the pump hopper

- Clearly structured display of operating and error messages
- Optional: Communication via conventional fieldbus systems
- Integrated resettable operating hours counter for each pump
- Dry running protection to protect the rotor and stator conveying elements
- Overpressure protection with freely adjustable cut-off pressure
- Various operating languages available

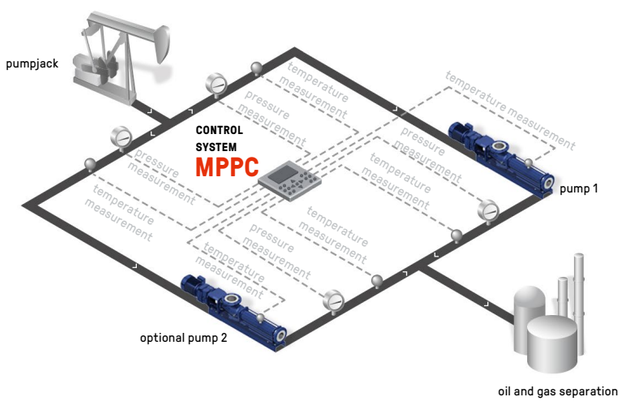
MPPC MULTIPHASE CONTROLLER.

In multi-phase pumping, crude oil is transported over long distances, together with its associated gaseous, liquid and solid substances. In this process, the MPPC multiphase controller ensures the optimal operating point, thus achieving maximum pumping capacity while simultaneously protecting the SEEPEX progressive cavity pump.

The wide range and often very varied loads necessitate the comprehensive logging of measurement data directly at the pump. With this measurement data, the MPPC is capable of setting the optimal operating point during all phases of operation, thus avoiding overloading the pump. In the event of an increase in pump load, the pump is not simply “switched off”, but the capacity of the pump is reduced to a level at which the load no longer represents a problem.

BENEFITS

In the event of critical pump loads, intelligent pump regulation ensures longer pumping times and pump protection. This operating principle of the MPPC control system facilitates longer pumping times and thus higher capacity on the part of the pump. In conditions where pure gas needs to be ”pumped”, circulation fluids can be used to prevent run-dry damage. The controls can be programmed for two pumps to operate in parallel within the same system.



APPLICATIONS

Multiphase applications in the oil and gas industry

KEY FACTS

- Display: 10.4” TFT color
- Dimensions (LxWxH): 323 x 86 x 358 mm
- Protection class: IP65 (front)

FEATURES

- Convenient operation through process visualization
- Integrated 24h signal recorder for each pump
- Operation of one or two multiphase pumps and additional injection pumps
- Password-protected parameters
- Long-term measurement data storage on USB stick (csv format)
- Integrated system diagnosis manager (SDM) allows control diagnosis, even in the event of display failure
- Modbus interface integrated, additional fieldbus systems optional

- Clearly structured display of operating and error messages
- Integrated resettable operating hours counter for each pump
- Dry-running monitoring to protect the rotor and stator conveying elements
- Overpressure protection with freely adjustable cut-off pressure
- Various operating languages available

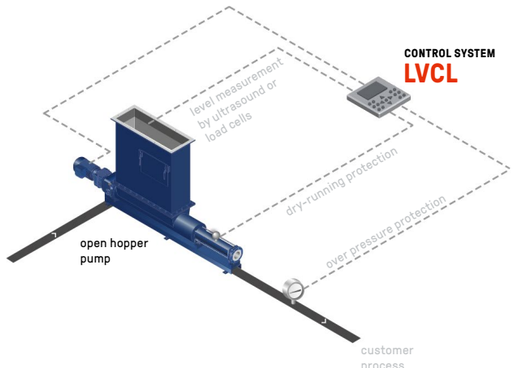
LEVEL CONTROL LVCL.

A wide range of different customer processes require the level of product in the pump hopper to be optimized with the incoming feed rate and the SEEPEX pump output capacity. Here, too, SEEPEX supplies a control system solution. The LVCL control system continuously and precisely regulates the level by changing the pump speed.

The level of the pump medium is measured e.g. by means of ultrasonic, laser, pressure transducer or load cells, and is adjusted to a pre-set target value. The process is monitored by the SEEPEX control system. If faults occur, these are reported and the process is stopped if necessary, in order to avoid damage to the pump and the plant.

BENEFITS

Optimal control of the pump in relationship to pump hopper level/input feed. Pump and drive service life is increased due to the elimination of frequent start and stops. Automatic operation reduces the number of people required to monitor the de-watering functions.



APPLICATIONS

Various industries/sectors

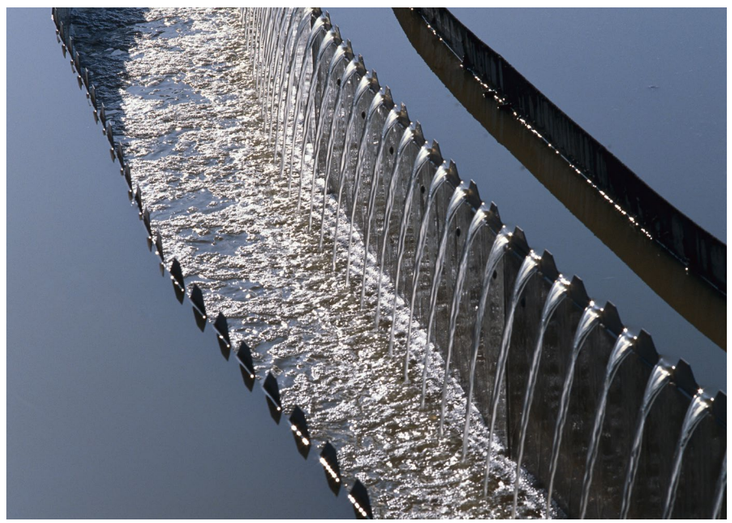
KEY FACTS

- Integrated LC display
- Dimensions (LxWxH): 153 x 46 x 120 mm
- Protection class IP65 (front)

FEATURES

- Simple operation
- Constant filling level regulation

- Clearly structured display of operating and error messages
- Optional: Communication via fieldbus systems
- Integrated resettable operating hours counter
- Dry running monitoring to protect the conveying elements rotor and stator
- Overpressure protection with freely adjustable cut-off pressure
- Various operating languages available



DOSC DOSING CONTROL SYSTEM.

In many branches of industry, e.g. in the food, beverage, pharmaceutical or cosmetics sectors, it is necessary for materials to be dosed or portioned.

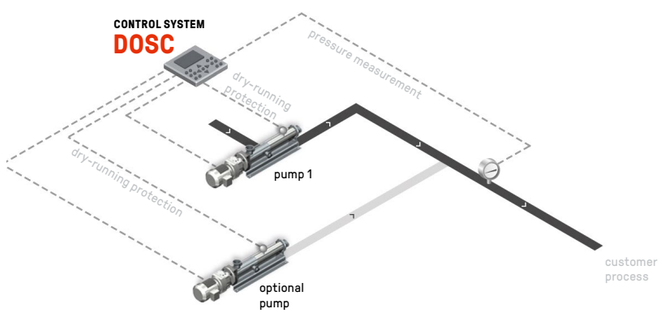
The DOSC controller enables precise dosing of such materials. Two separate processes are considered here. During dosing, a continuous volume flow rate is added to the process. Portioning is used for dispensing specific quantities.

While only the volume flow rate is defined for dosing processes, portioning requires both the dosing time and the dosing quantity to be set as parameters. The control system measures the volume flow rate using flow meters, or alternatively using a pulse generator at the motor shaft.

Optionally, additional pumps following the same signal at different ratios can be integrated into the control system.

BENEFITS

For countless applications, the DOSC means high dosing accuracy and smooth processes. Tried and tested protection mechanisms against dry running and overpressure protect the pump and pump components, and ensure long, repeatable, reliable and cost-effective operation.



APPLICATIONS

Dosing of additives

KEY FACTS

- Display: Integrated LC display
- Dimensions (LxWxH): 153 x 46 x 120 mm
- Protection class IP65 (front)

FEATURES

- Precise and repeatable dosing
- Convenient operation
- Additional dosing pumps can optionally be integrated

- Clearly structured display of operating and error messages
- Communication via fieldbus systems
- Integrated resettable hours run meters
- Dry running monitoring to protect the conveying elements rotor and stator
- Overpressure protection with freely adjustable cut-off pressure
- Various operating languages available

SMART DOSING PUMP (SDP).

The great challenge for plant operators and designers in all branches of industry is to ensure cost-effective and energy-efficient operation, optimized processes and minimize down-time. With the Smart Dosing Pump (SDP), SEEPEX offers an intelligent dosing pump for all applications, from complex dosing tasks in industrial settings to laboratory applications.

The new Smart Dosing Pump with Integrated Control combines the classic benefits of a progressive cavity pump with modern, decentralized control concepts.

SEEPEX progressive cavity pumps are the first choice for implementing media pumping applications with high dosing accuracy that are especially low-pulsation, and hence resource-efficient. They are applied successfully in virtually all industries, and pump thin to highly viscous media, as well as media containing solids and chemically aggressive media.

With the SDP, SEEPEX is launching a control technology where the functionality of the programmable logic controller is already integrated into both the hardware and software of the pump.

BENEFITS

This significantly reduces the work involved in integration and maintenance. Instead of complex implementation in superordinate control systems, the Smart Dosing Pump requires only target values and user commands to be transmitted. The complex dosing or portioning process is implemented independently by the pump.

APPLICATIONS

- Environmental engineering
- Water processing
- Chemical and biochemical industries
- Oil, gas and petrochemicals
- Food & beverage industry
- Pharmaceutical and cosmetics industry
- and many more

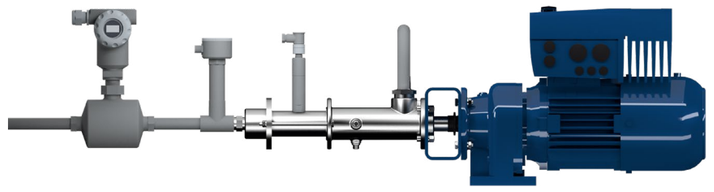
KEY FACTS

- Conveying capacity: up to 2,000 l/h (8.81 USGPM)
- Pressure: up to 48 bar (720 psi)

FEATURES

- Simple implementation of complex dosing and portioning processes
- Realization of short dispensing times and simultaneous resource-efficient media pumping
- Cost reductions due to high dosing accuracy and lack of pulsations
- Easy integration into plant automation control systems
- Operation via handheld panel, or optionally via various fieldbus systems
- Wide pumping capacity range thanks to modular system
- Dry running monitoring to protect the conveying elements rotor and stator
- Dynamic pump drive system allows very short dispensing times during portioning

SDP



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SEEPEX GmbH
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