

SEEPEX.

An Ingersoll Rand Business

EVERYTHING UNDER CONTROL

CO – CONTROL SYSTEMS

CO

INTEGRATED APPROACH.

ABOUT US

PUMPING SOLUTIONS SINCE 1972

PRODUCTS

- Progressive cavity pumps
- Pump systems
- Digital solutions

CORE COMPETENCIES

- Comprehensive consulting
- First-class service
- Customer-specific solutions
- Continuous innovation

SEPEX is a leading global specialist in pump technology with progressive cavity pumps, pump systems and digital solutions. Our progressive cavity pumps and control systems are used wherever thin to highly viscous, abrasive or aggressive media needs to be pumped with minimal pulsation and the highest precision.

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

SEPEX is far more than just a pump manufacturer. The highly qualified engineers and technicians at SEPEX 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, SEPEX offers a wide range of service programs, which ensure long-term value, optimal operation and minimize life cycle costs of the pump.

OPTIMALLY COORDINATED.

SEPEX control systems (CO) are highly developed and powerful systems for the automated control of processes.

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

- **SLCL** = Sludge Conditioning Control
- **BGDC** = Biogas Dosing Control
- **MPPCL** = Multi Phase Pump Control
- **LVCL** = Level Control
- **DOCL** = Dosing Control
- **PRCL** = Pressure Control
- **FPPCL** = Filter Press Pump Control

The SEPEX control systems are specifically used to control and monitor and are precisely integrated into the respective environment. The CO systems optimize customers' processes by making them more economical and safer.

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

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

PLATFORM INDEPENDENT TECHNOLOGY

Did you know that almost all of our controls are platform-independent and can be supplied as software for the most common hardware platforms? This means more flexibility, optimized visualization options and a quick response to your individual requirements.

You can be sure that SEPEX's intelligent and safe controls know exactly how your pump ticks, e.g. whether it is running at the optimal operating point, switching off at the right time or dosing in perfect amounts. This automatically reduces your operating costs in the long run.



SLCL DOSING CONTROL.

APPLICATIONS

Conveying and conditioning of sewage sludge

FEATURES

Cost saving

Avoids over/under dosing while also protecting the pump and its components

Optimized processes and quality

Uniform lime dosing and very thorough mixing

Optimal protection

Includes proven protective mechanisms against dry running and overpressure

Compatible

Simple integration into high-level process control systems

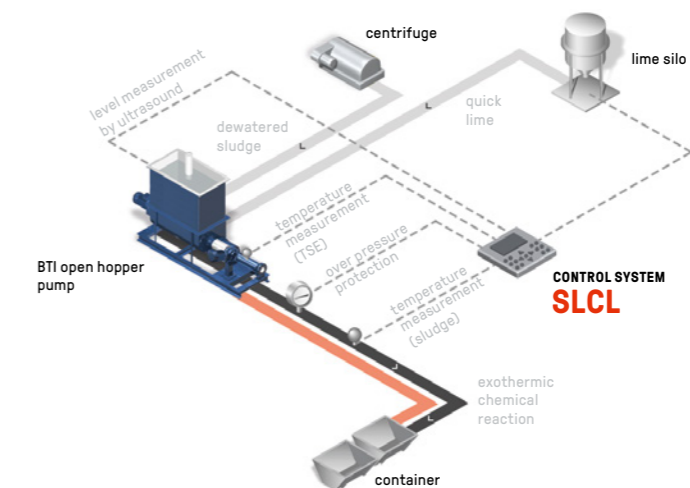
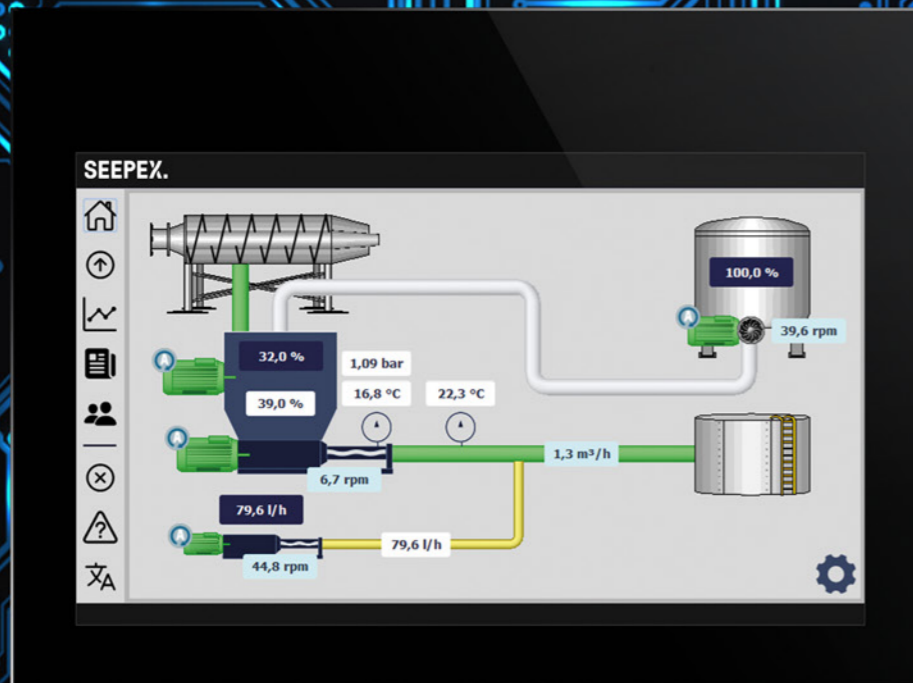
For conditioning sludge with quick lime, SEEPEX pumps are used to mix and pump dewatered sludge from centrifuges and belt filter presses. The SLCL control system has been specially developed for conditioning sewage sludge.

In this process, dewatered sludge is discharged into the 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

- Safer hygienization and long-term stabilization of the sludge
- Uniform lime dosing and thorough mixing



BGDC BIOGAS CONTROL.

APPLICATIONS

Fermenter charging in biogas plants

FEATURES

Process stability

Individually adjustable mixing ratio of liquids and solids

Optimal protection

Includes proven protective mechanisms against dry running and overpressure

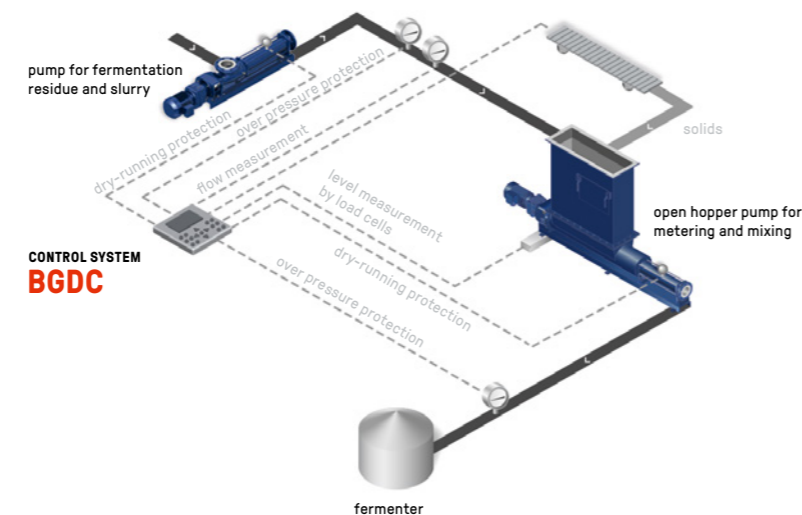
The BGDC controller is a dosing, mixing and pumping system specially designed for biogas generation.

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

In this process, a BN range pump 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

- Dosing, mixing and pumping as a complete system
- Optimal preparation for subsequent processes



MPPCL MULTIPHASE CONTROL.

APPLICATIONS

Multiphase applications in the oil and gas industry

FEATURES

Cost saving

Maximizes service life of the pump through efficient protection of the pump and its components

Safe

No pump overloading, even at high loads, due to comprehensive logging of measurement data directly at the pump

Tandem operation

Can operate one or two control systems and additional injection pumps together

Optimal protection

Includes proven protective mechanisms against dry running and overpressure

Process stability

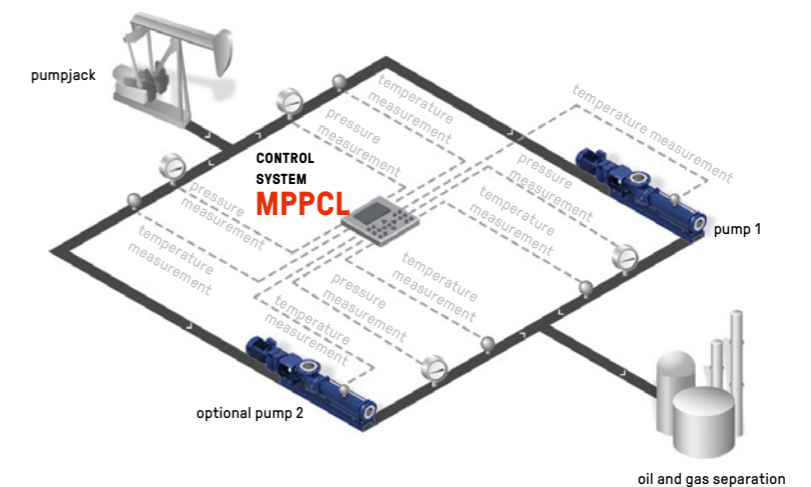
When pump loads are too high, the pumping capacity is reduced, instead of switching off the pump – ensuring longer pumping times and avoiding downtime

In multi-phase pumping, crude oil is transported over long distances, together with its associated gaseous, liquid and solid substances. In this process, the MPPCL 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 MPPCL 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

- Maximum pumping capacity
- Higher outputs



LVCL LEVEL CONTROL.

APPLICATIONS

Various industries/sectors

FEATURES

Cost saving

Maximizes service life of the pump through efficient protection of the pump and its components

Energy efficient

Ensures a consistent product level in the hopper and/or supply tank

High performance

Optimal pump output and pumping capacity due to a stable product level

Optimal protection

Includes proven protective mechanisms against dry running and overpressure

Compatible

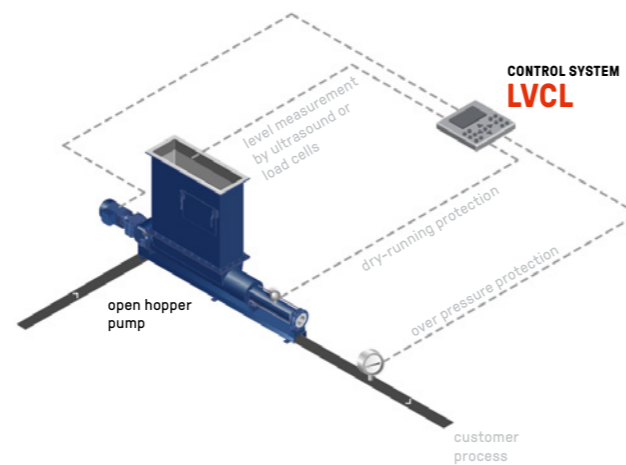
Simple integration into high-level process control systems

A wide range of customer processes require the product level in the pump hopper to be optimized with the incoming feed rate and the SEEPEX pump output capacity. Our LVCL control system precisely and continuously regulates the level by changing the pump speed.

The level of the pump medium is measured 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

- Optimized settings for the pump output
- Longer pump lifetime



DOCL DOSING CONTROL.

APPLICATIONS

Dosing of additives

FEATURES

Versatile applications

For dosing and metering tasks in numerous sectors and applications, for a wide range of materials in almost all viscosities, with or without solids

Cost saving

Avoids over/under dosing while also protecting the pump and its components

Optimized processes and quality

High dosing accuracy for consistent product quality

Optimal protection

Includes proven protective mechanisms against dry running and overpressure

Compatible

Simple integration into high-level process control systems

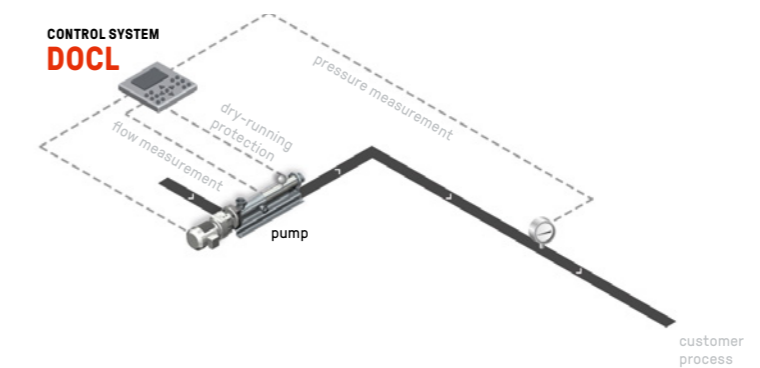
In many branches of industry, e.g. in the food, beverage, pharmaceutical or cosmetics sectors, it is necessary for materials to be dosed or portioned.

The DOCL 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.

BENEFITS

- Highest dosing accuracy
- Avoiding overdosing and underdosing greatly reduces costs



PRCL PRESSURE REGULATION.

APPLICATIONS

Various industries and sectors

FEATURES

Cost saving

Maximizes service life of the pump through efficient protection of the pump and its components

Energy-saving & efficient

Optimal pump performance through constant process pressure

Optimal protection

Includes proven protective mechanisms against dry running and overpressure

Compatible

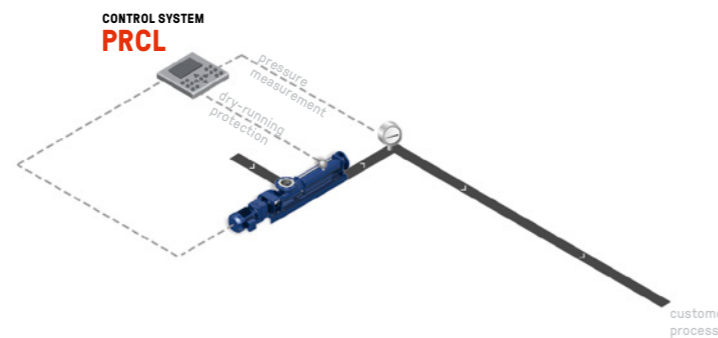
Simple integration into high-level process control systems

The PRCL pressure control keeps the process pressure constant, which minimizes pressure fluctuations and maximizes energy efficiency. With the help of sensors, this control unit can immediately compensate for small pressure fluctuations or prevent larger pressure fluctuations in advance.

Many processes require a constant pressure throughout the system. The PRCL pressure control keeps the system pressure constant by changing the pump speed. If an inadmissible value is reached, an error message is triggered and the process is switched off. The basis is a programmable logic control with an integrated display and control unit.

BENEFITS

- Constant process pressure for optimal pump performance
- Higher energy efficiency by avoiding pressure fluctuations



FPPCL FILTER PRESS FEEDING.

APPLICATIONS

Sludge dewatering with filter presses

FEATURES

Process stability

Prevents premature sludge compaction on the filter cloths through individual adjustment of the conveying capacity

Efficient

Effective filling and shortened filtration times due to a consistent, maximum filtration pressure

Optimal protection

Includes proven protective mechanisms against dry running and overpressure

Flexible

Offers a modular structure for all combination options for pre-filling, high-pressure and flocculant pumps

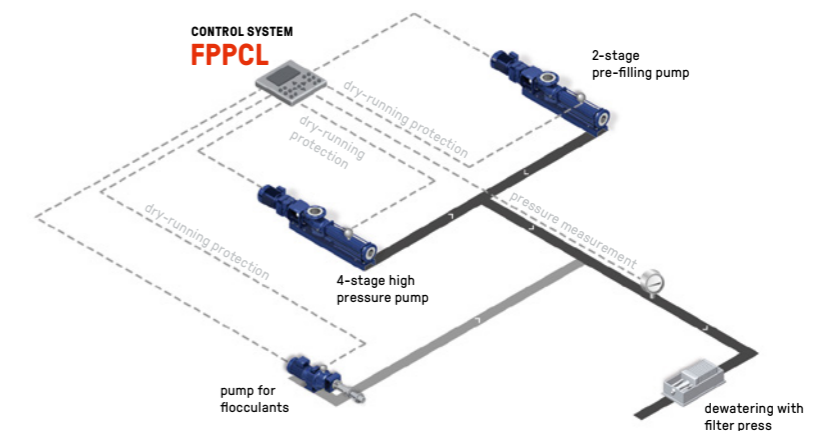
With the combination of the FPPCL filter press feeding system and BN range pumps, SEEPEX offers an intelligent system for feeding plate and frame filter presses in sludge dewatering applications.

The FPPCL control system optimizes the control and filling of plate and frame filter presses. This 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 separate 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 FPPCL 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

- Effective filling of filter presses
- Prevents premature sludge compaction on the filter cloths



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