

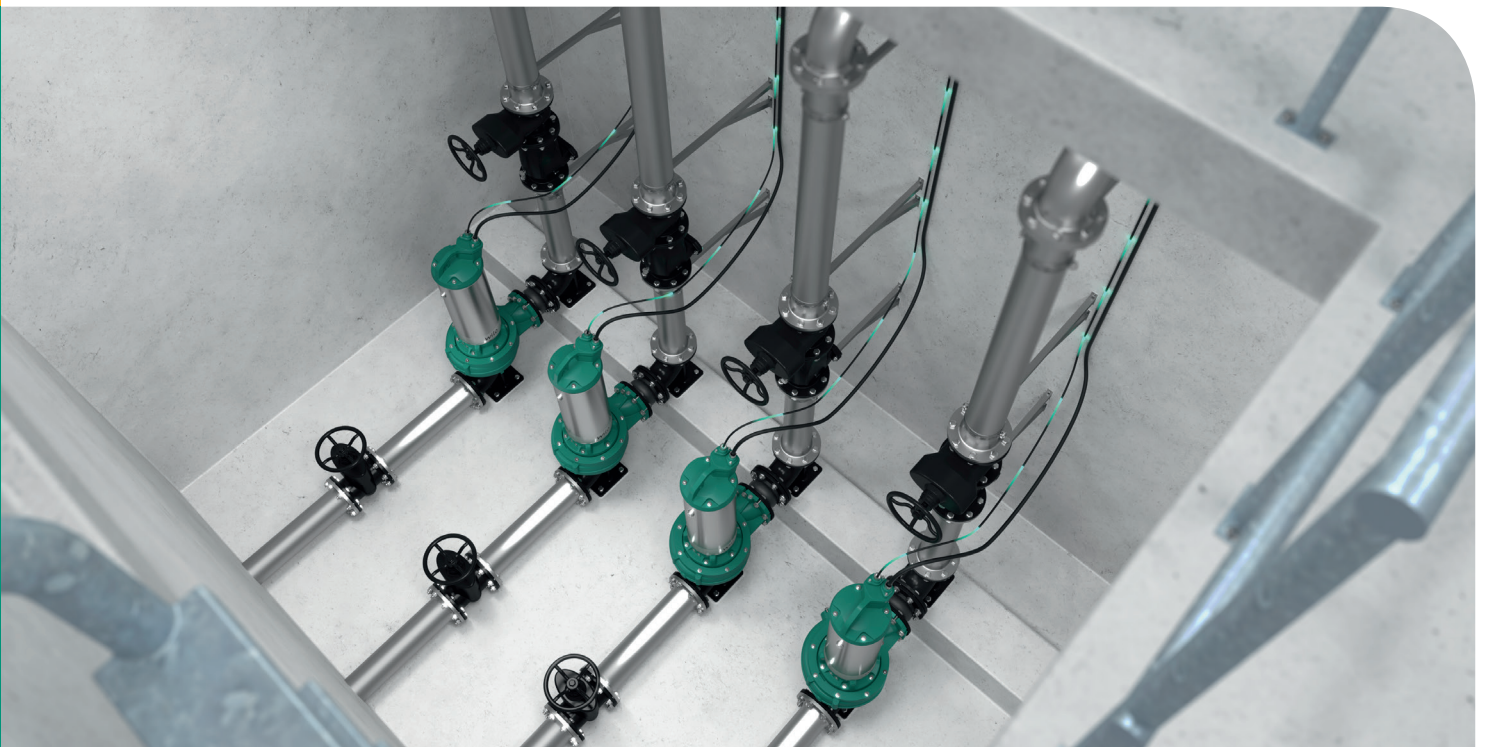
Pioneering for You

wilo

*Product brochure*

## Wilo-Rexa SOLID-Q with Nexos Intelligence

The intelligent system solution for a smart sewage pump station



  
**NEXOS**  
INTELLIGENCE



  
**NEXOS**  
INTELLIGENCE



# Innovations for a more effective future

## Our water management solutions



### Our promise to you

Wilo is a premium supplier of pumps and pump systems for building services, water management and industrial applications. With over 7,700 employees across more than 60 countries, Wilo develops more than just products, systems and services that assist you effectively in your daily work. “Pioneering for You” is our lasting commitment to clear customer focus, unrelenting pursuit of quality and an expression of our special passion for technology.

### Sustainably better

In times of scarce natural resources companies continue to face new challenges: responsibly handling the water as a dwindling resource, more stringent specifications and statutory stipulations as well as a continuously growing global population. In an effort to overcome these challenges, you are forced to optimize your processes and operative efficiency using smart technologies.



### More is more: in-depth digital content

Our added bonus for you: each product image bearing the AR icon in this brochure can be scanned using the Wilo-Assistant app AR scanner. Simply scan the product photo with your smartphone’s camera – and find out more about our products and solutions.

**We aspire** to offer you sustainable, user-friendly and high-performance solutions that are ahead of their time. We work closely with our customers to create innovative products and systems that perfectly match their requirements and are rounded off with convenient services. The result is integrated solutions you can rely on at all times.

1



Download the Wilo-Assistant app.

2



Launch the Wilo-Assistant app, tap on the AR logo and scan the content with your smartphone camera.

# The future of sewage transport is smart

## Our digital networks set new benchmarks

### Your challenge

Pumping untreated sewage is an increasingly demanding task for sewage pump station operators: in sewage systems, the proportion of solid matter and retention time in the network are increasing; and the pumped fluids are becoming more aggressive and problematic. Sewage, sludge and sludge water as well as abrasive or fibrous fluids have to be reliably and efficiently transported at different flow

rates and delivery heads. Our products are characterized by operational reliability, energy efficiency and connectivity. A long service life and intelligent control systems as well as pump and pump system networks are gaining significance to guarantee sewage pump stations are operated as cost-efficiently as possible.



Connectivity



Operational reliability



Energy efficiency

### Our solution

As a solutions provider, Wilo offers a unique system solution for smart sewage pump stations. The Wilo-Rexa SOLID-Q with Nexos Intelligence is characterised by its outstanding operational reliability, energy efficiency and connectivity in combination with digital interfaces and adaptable functions. This is how we sustainably boost convenience and efficiency as part of your day-to-day activities.



# Intelligence for your sewage pump station

## Convenience and connectivity in a single solution

Thanks to Wilo-Rexa SOLID-Q you bring the future to your sewage pump station. The reason: it merges convenience and connectivity in a single solution. In this process, it is always reliable, safe and highly efficient thanks to new

motor and hydraulics technologies as well as the integration of the most recent networking systems.

**Comprehensive, cutting-edge sensors to ideally monitor conditions and identify faults at an early stage**

**Integrated Nexos Intelligence with vibration monitor**

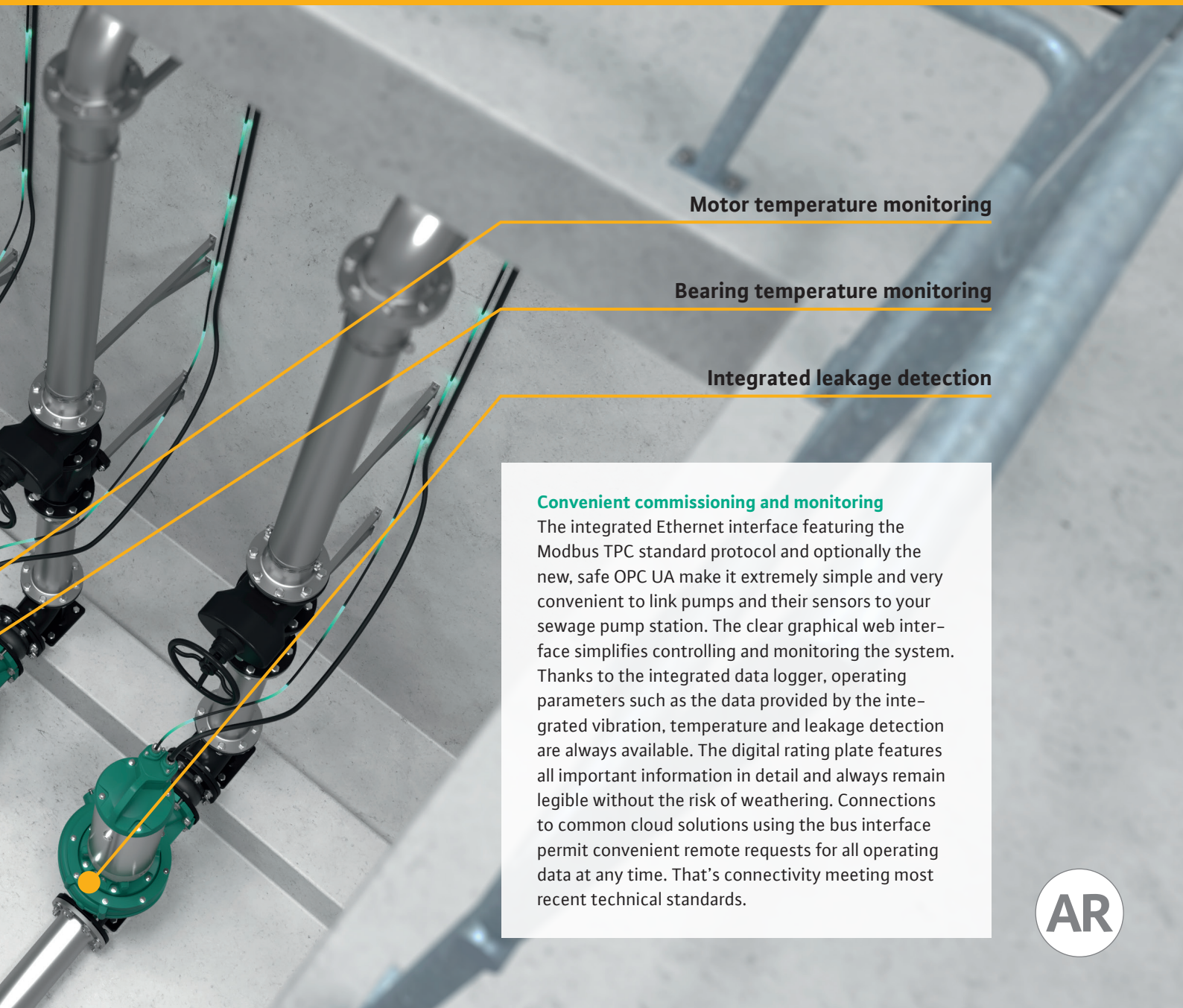
**IE5\* motor technology**  
(\*according to IEC TS 60034-30-2)

**High-efficiency SOLID-Q hydraulics with self-cleaning characteristics**





Connectivity

**Motor temperature monitoring****Bearing temperature monitoring****Integrated leakage detection****Convenient commissioning and monitoring**

The integrated Ethernet interface featuring the Modbus TPC standard protocol and optionally the new, safe OPC UA make it extremely simple and very convenient to link pumps and their sensors to your sewage pump station. The clear graphical web interface simplifies controlling and monitoring the system. Thanks to the integrated data logger, operating parameters such as the data provided by the integrated vibration, temperature and leakage detection are always available. The digital rating plate features all important information in detail and always remain legible without the risk of weathering. Connections to common cloud solutions using the bus interface permit convenient remote requests for all operating data at any time. That's connectivity meeting most recent technical standards.



# Nexos LPI: intelligently boost operational reliability

## The optimal solution for smart sewage pump stations

With the Wilo-Rexa SOLID-Q featuring Nexos Intelligence you will make your sewage pump stations significantly smarter and ready for the future. Thanks to Nexos LPI (Nexos Lift Pump Intelligence) development level you

benefit from additional connectivity and smart functions that make operation significantly safer and your working day more convenient.

### With Nexos LPI smart already starts inside the pump

In the Wilo-Rexa SOLID-Q featuring Nexos Intelligence the smart components are already installed in the pump. Their connectivity levels make them highly compatible with all external PLC systems. Ethernet-based communication quickly and directly exchanges information between pump and frequency converter and this makes it possible to implement functions including external cloud solutions for remote monitoring, external sensors and central PLC. The pump's revolutionary frequency converter control enables a number of functions adapted to the hydraulics and the most simple inverter parameterizations at the press of a button on the pump.





Operational reliability



#### **Intelligent ways to boost operational reliability**

The ratio of solids and fibrous material in sewage continues to be on the rise as a result of more effective water handling and an increased use of wet wipes. With its geometry the hydraulics boast self-cleaning properties. The integrated Nexos Intelligence also fully automatically detects impending clogging. Individually adaptable cleaning cycles that have been specifically geared towards the hydraulics guarantee highly effective hydraulics cleaning. This prevents downtime and costly service call-outs at night or on weekends to save operators time and most of all money.

# Nexos LSI: systematically boost your energy efficiency

## The smart solution with integrated multi-pump control

The Wilo-Rexa SOLID-Q with Nexos Intelligence is the most efficient system solution for your smart sewage pump station. Thanks to their patented energy efficiency algorithms featuring Nexos LSI (Nexos Lift System Intelligence) development level, they guarantee

energetically optimized pump operation without additional external control systems. The system merges all benefits of other Wilo-Rexa SOLID-Q development levels and additionally offers you significant advantages making it a uniquely efficient, operationally reliable and convenient solution.



### Intelligent energy efficiency optimization with LSI

Wilo-Rexa SOLID-Q in Nexos LSI development level sets new benchmarks for the system efficiency of your sewage pump station: the patented energy efficiency algorithm records and automatically controls the optimum pump speed to match the energy levels. The integrated control system autonomously and dynamically adapts the speed to variable inlet conditions and detects changes to the system curve. As a result, you can minimize unnecessary loss due to pipe friction and further boost efficiency levels while maintaining reliable operation.



### Integrated, redundant master-slave system control

With Nexos Lift System Intelligence the pump control is in the pump – do away with an external PLC. Through the redundant master-slave control you guarantee sewage pump station operation at any time. Thanks to the integrated intelligence, the slave pump automatically takes over control functions during maintenance and malfunction of the master pump. With non-immersed operation you can regularly and fully pump out the pump sump to prevent additional deposits. And the graphical web interface allows convenient configuration of many operating modes – from simple level control to PID controller.





Energy efficiency

#### Working flexibly and independently for you

If the data is inconclusive or usage conditions fluctuate, you need a flexible system. In conjunction with integrated Nexos Intelligence, Wilo-Rexa SOLID-Q directly and flexibly actuates the frequency converter. Be it at a constant speed, external dynamic frequency specifications for Nexos LPI or automatic Nexos LSI control programs: you will always have plenty of room for adaptations to the duty point if anything is unclear or parameters have changed.

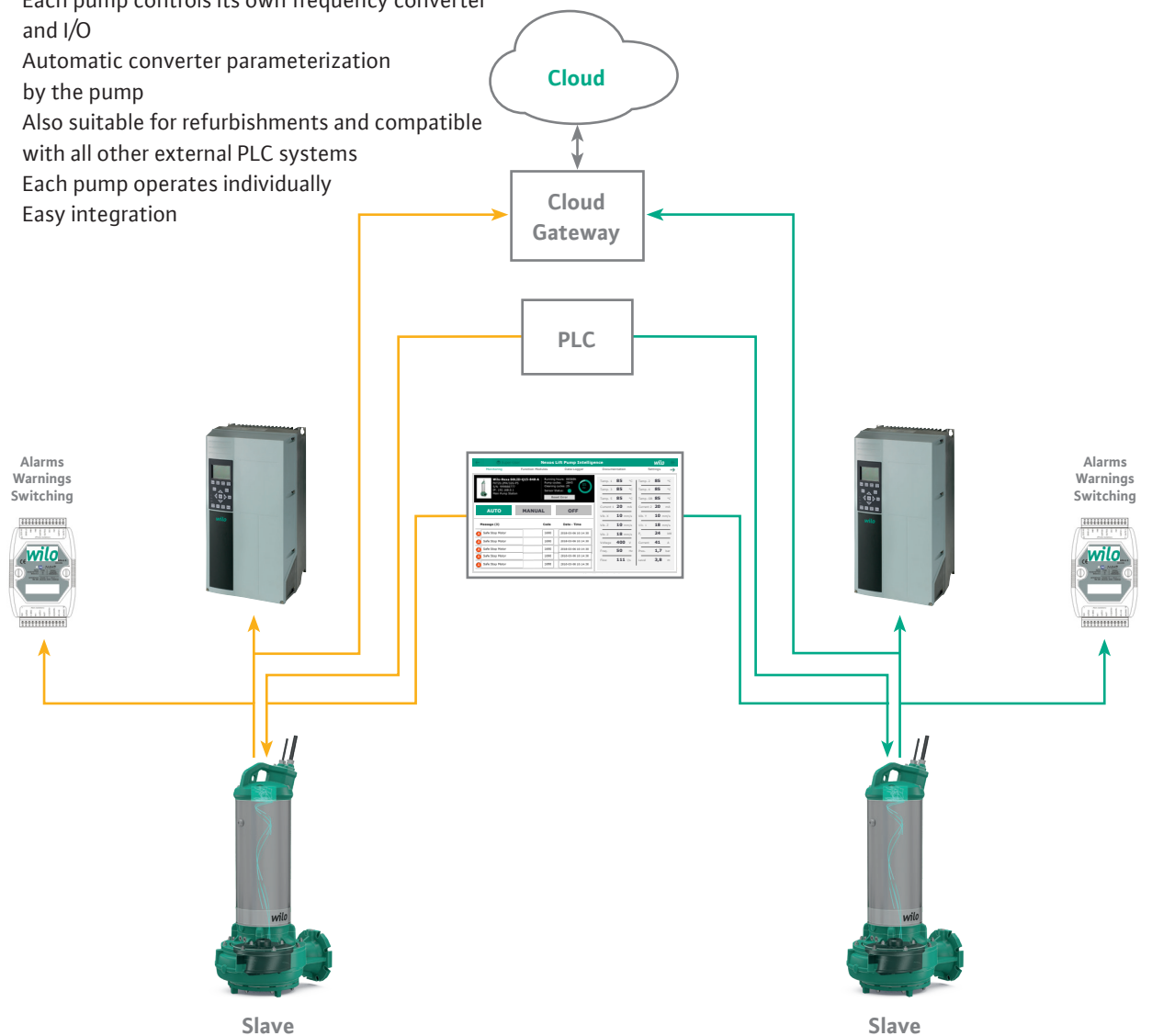


# WiloxRexa SOLID-Q at a glance

All important information  
about our solution

## Nexus LPI for systems with external control

- Each pump features its own dedicated web interface
- Fill level control using external PLC
- Each pump controls its own frequency converter and I/O
- Automatic converter parameterization by the pump
- Also suitable for refurbishments and compatible with all other external PLC systems
- Each pump operates individually
- Easy integration



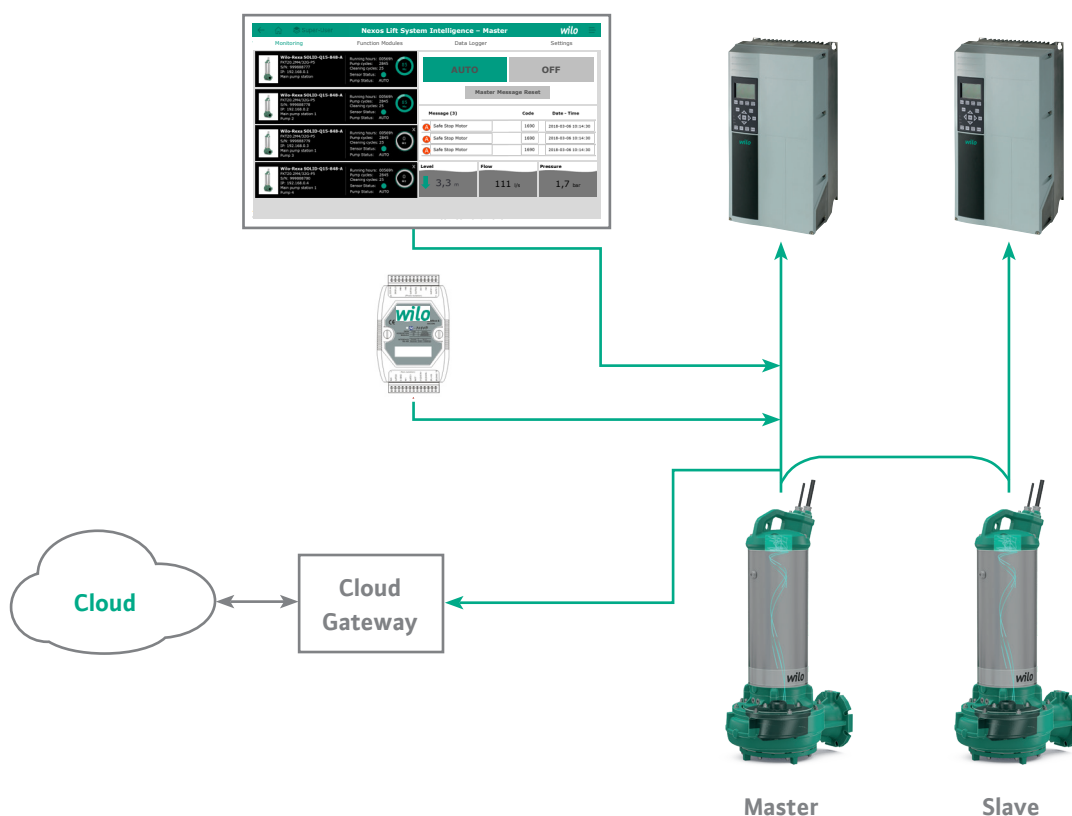
Logical flow of information

### Development levels at a glance

	Nexos LPI (Lift Pump Intelligence)	Nexos LSI (Lift System Intelligence)
Integrated Ethernet interface	✓	✓
Integrated vibration monitor	✓	✓
Integrated online interface for control and visualization	✓	✓
Integrated data logger	✓	✓
Digital rating plate	✓	✓
Internal sensor connection	✓	✓
Integrated frequency converter control	✓	✓
Intelligent clogging detection with automatic cleaning function	✓	✓
Integrated redundant master-slave system control		✓
Intelligent optimization of energy efficiency		✓

## Nexos LSI For systems without external control

- Nexos system checks the fill level
- Master pump controls up to three additional pumps
- Each pump controls its own frequency converter
- One master online interface plus individual interfaces
- No additional PLC control system required
- Comprehensive automatic modes



# Our answers to your questions: Smart solutions by Wilo

## High degree of connectivity costs

### Our solution:

#### easy to integrate into a network (Nexos LPI, Nexos LSI)

Ethernet-based communication has long since become a standard: faster transfers and more convenient networks facilitate system operation. Thanks to the Ethernet interface in the pump you take the control level to the field. Reduce wiring costs and route all sensor signals using a bus connection without additional evaluation units. Consequently your sewage pump station is simply kept up to date.

## Complex handling

### Our solution:

#### straight-forward, intuitive pump control (Nexos LSI)

Nexos LSI provides the full functionality of a multi-pump control system in the pump. In this process, one pump manages up to three additional units and controls the pumping station in automatic mode without the need for an additional PLC in the switch cabinet. As a result, the control system features the same redundancy level as the pumps: If the master pump malfunctions, a different pump automatically takes over system control. The fully graphical online interface enables intuitive operation using the PC's Internet browser or a touch panel – simple and secure, on site or remotely.



### Frequently clogged pumps

**Our solution:**  
**self-cleaning and intelligent hydraulics properties**  
**(Nexos LPI, Nexos LSI)**

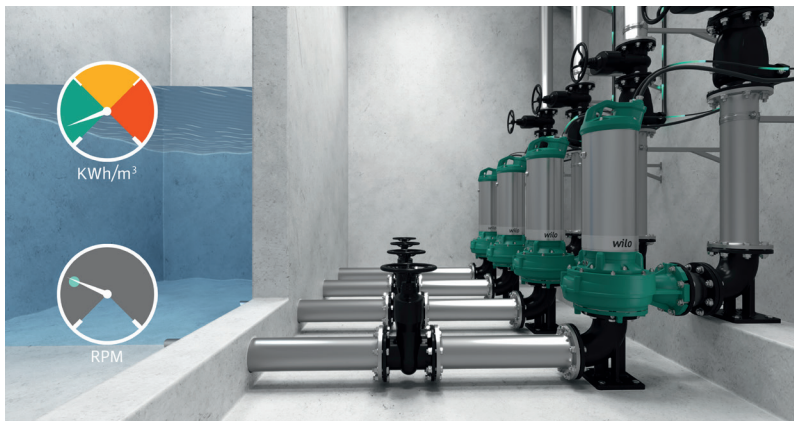
Special impeller geometry featuring a carved blade center and retracted inlet edge in conjunction with the connection to the discharge groove in the suction port guarantee self-cleaning properties for fibrous materials. At particularly high loads the integrated clogging detection delivers additional reliability thanks to hydraulics-specific cleaning cycles: costly downtime is reduced to a minimum.



### System energy reconditioning

**Our solution:**  
**high efficiency and high reliability (Nexos LSI)**

The new Wilo-Rexa SOLID-Q sets new benchmarks for the system efficiency of sewage pump stations: the hydraulics are characterized by high efficiency and high reliability levels. The permanent magnet motor delivers maximum motor efficiency thanks to energy efficiency levels comparable to IE5, even at partial load. Nexos Intelligence uses a patented algorithm to always adopt the ideal pump speed for the applicable energy levels as part of the system characteristics to minimize unnecessary loss caused by pipe friction.



### Versatile operating conditions

**Our solution:**  
**flexible system with Nexos Intelligence**  
**(Nexos LPI, Nexos LSI)**

Correct pump configuration is paramount to optimize operation. This requires the application of high variability levels and thus a flexible system. Integrated Nexos Intelligence flexibly actuates the external frequency converter.

Be it at a constant speed, external frequency specifications or automated Nexos LSI control modes, you can conveniently adapt the duty point.



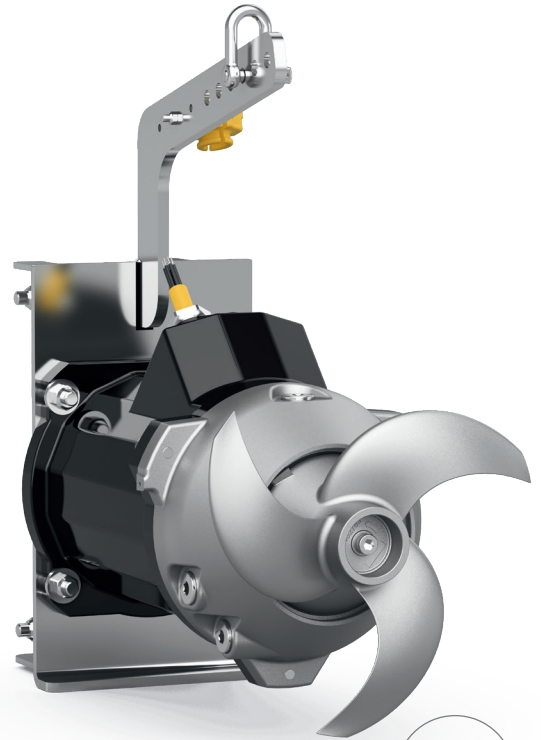
# A solution for every challenge

## More Wilo solutions for your sewage pump station

### Wilo-Flumen EXCEL

#### For mixing the pump sump

- Low clogging rate and reliable operation thanks to optimised hydraulics
- Low-wearing, thanks to the use of stainless steel investment-cast propellers with the lowest cavitation
- A wide range of possible uses in diverse applications, even at high-interval running times
- Reduction of the energy and operating costs thanks to a standard use of IE3 motors for the best possible thrust coefficient
- High flexibility thanks to the most diverse installation options and wide range of accessories



### Wilo-Rexa UNI

#### For using your sewage pump station flexibly

- Excellent reliability thanks to corrosion-free hydraulics for universal application and various fluids
- Easy installation thanks to its light weight, integrated capacitor at the single-phase motor and flange with integrated fixation
- Optimum efficiency and operational safety thanks to its vortex hydraulics and smooth surfaces
- Quick maintenance facilitated by direct access to the sealing chamber and pump housing
- Long maintenance interval thanks to its double seal and a high volume sealing chamber



# Wilо-Services

## A full-service package for you as our partner

With Wilо as your partner, you cannot only be sure of choosing high-quality product solutions, but also of benefiting from a comprehensive, carefree package of individual services. This means that we reliably support you in every project phase from design and configuration, right through to commissioning and maintenance.

We don't want you to choose just any old solution – we want you to find the one that meets your exact requirements. As a result, we define your requirements with you before the purchase and, based on this, prepare the individual product solution that is most economical for you.

### BEFORE THE PURCHASE

#### We make the design and selection process simple for you

- On-site support
- Consulting support
- Product selection
- Select programmes
- Installation drawings
- Documentation

### DURING THE PURCHASE

#### Get your purchase right with Wilо

- Certification
- Acceptance testing at the plant
- Commissioning
- Start-up



Finance

#### Wilо-Financial Services

We can help you with the financial implementation of your projects, and we'll gladly create a quotation specially tailored to your demands.

Consequently, you can invest in a future-proof solution – and ultimately even save money.

### AFTER THE PURCHASE

#### We are here for you – even after the purchase

- Customised, reliable maintenance concepts
- Rapid repair service
- Fast spare parts solutions
- Efficiency check
- Specific training courses



WiloCare

#### Wilo Care

#### Our comprehensive, full-service package

Our service offer at a fixed monthly rate for guaranteed operational reliability and cost certainty. Monthly reports keep you up to date on how your system is doing: system status, energy consumption, possible optimisations and pending maintenance intervals.



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Pioneering for You



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