

# Driving Innovation in Wastewater Collection



**SULZER**



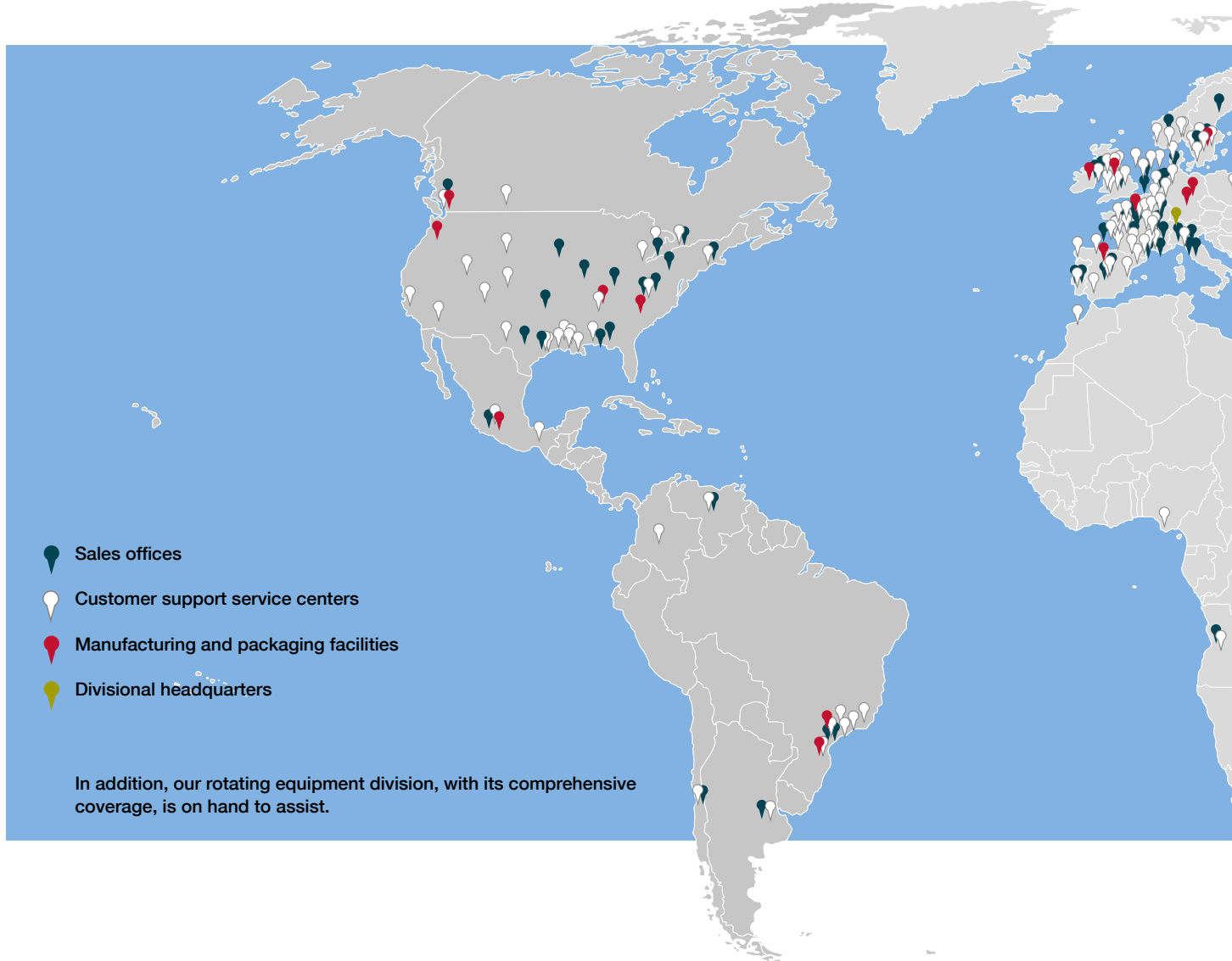
# The Sulzer Advantage

## Innovative and proven pumping and mixing solutions

*As a global leader in pump and agitator design and manufacture, Sulzer is recognized for delivering the excellent product quality and performance reliability required for a wide range of applications in the wastewater industry.*



# Our Organization Spans Across the Globe



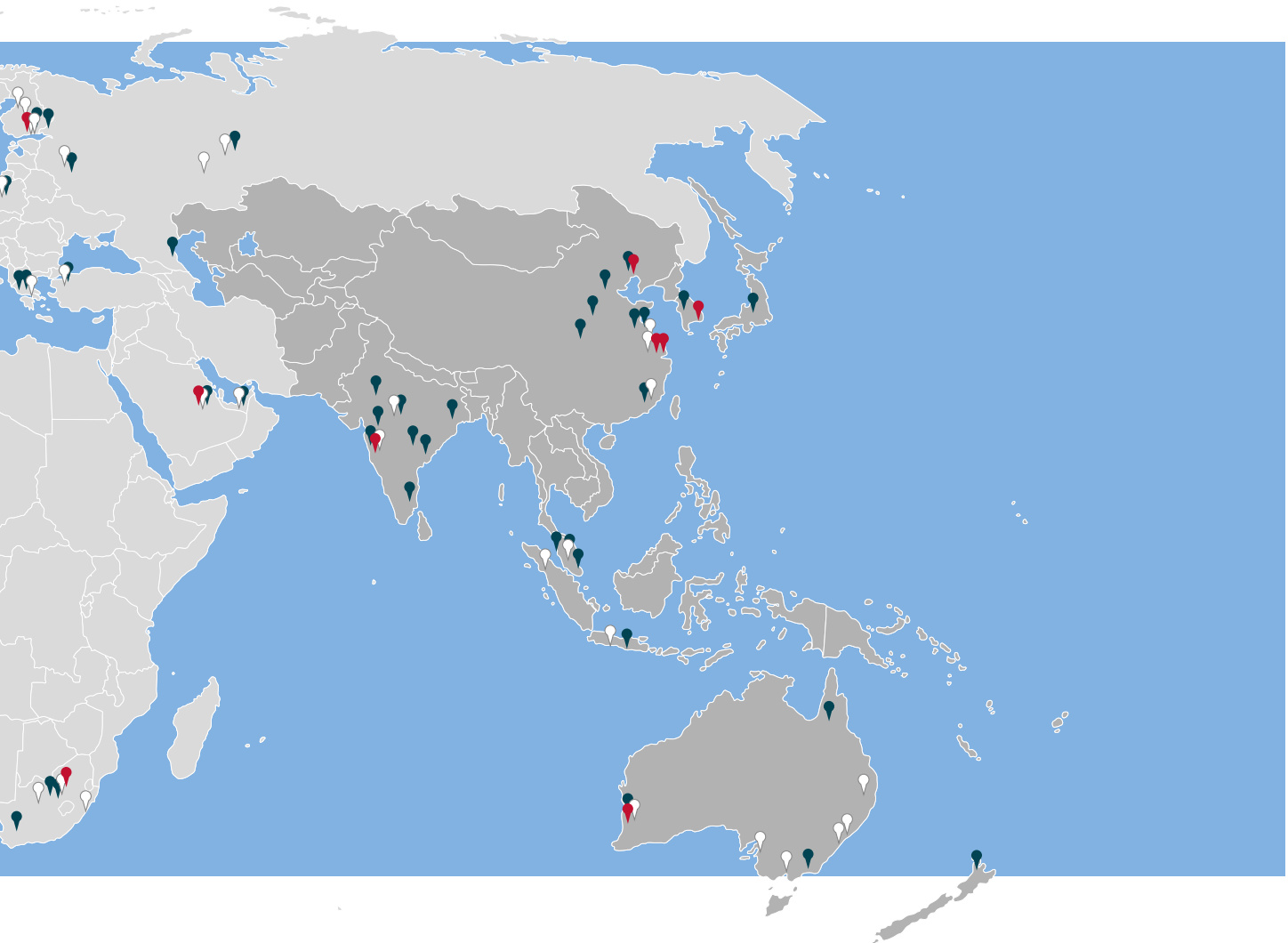
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*Wherever you are Sulzer is close by, bringing you the best in pumping and mixing technology, expertise and services. With our large global presence, we have strategically placed sales, customer care and delivery facilities that keep us close to you. Sulzer is your best partner for achieving all your performance, reliability, safety and sustainability goals.*

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Sulzer's global delivery and customer service network, which includes a network of advanced service centers and parts processing centers, provides qualified services for the entire product life cycle. We are well known for our state-of-the-art products, performance, reliability and energy-efficient solutions. Our customers benefit from our intensive research and development in fluid dynamics,

process-oriented products and special materials. All Sulzer manufacturing plants have advanced testing facilities, capable of demonstrating pump performance and testing ancillary equipment to ensure smooth commissioning and start-up procedures.



### Quality and sustainability

We are committed to providing our customers with the best products at the highest quality standards in the industry. All of our locations around the world implement certified management systems in accordance with ISO 9001 (Quality), ISO 14001 (Environment) and OHSAS 18001 (Health and Safety) as an effective way to sustain the continuous improvement of our processes and products. Some of our locations also have specific certifications, such as ATEX IECEx03.

# Driving Innovation for Your Wastewater Business

*Your business faces not only its own challenges, but also those of the changing world around it.*



## Global

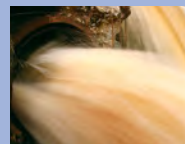
A changing world and changing legal requirements place pressure on your business.



Legislation



CO<sub>2</sub> limits



Overflow concerns



Climate change



Urban development

## Business

You face an economic reality and the service demands of your customers.



Reducing energy costs



Lowering operating costs



Improving service levels



Municipal vs. private structures



Replacements and upgrades

## Social

Your business is a part of meeting larger goals in a broad human perspective.



Water consumption



Personal hygiene



Environmental protection



Sustainability

Wastewater has changed dramatically in recent years. It contains less water but more solids and fibrous materials, which places tough new demands on collection networks. Sulzer's innovative pumps, impellers and controllers ensure the highest reliability – and energy efficiency.

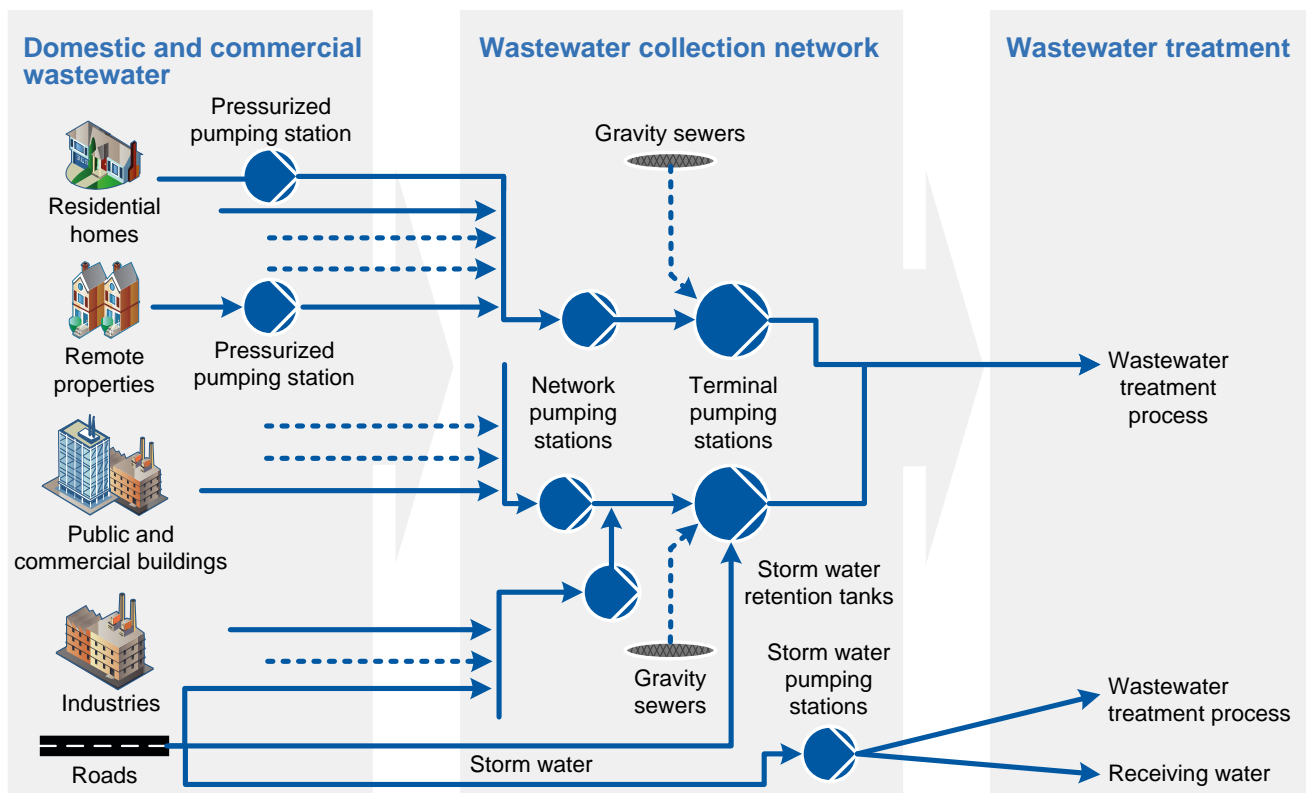
Sulzer continuously strives to design, develop and manufacture the most innovative, reliable and resource-conserving solutions on the market. The result is future-proof solutions that reduce your operating costs.

On the one hand, our solutions maximize uptime and minimize blockage-related maintenance. This is done through advanced hydraulics, including impellers with large free solids passage and superior rag handling.

On the other hand, our solutions reduce energy consumption. Premium Efficiency IE3 motors are standard, and further savings are achieved through our intelligent monitoring and control.

Our equipment is supported by a comprehensive range of services, including our 4-Step Process™ for identifying and realizing potential reliability and energy improvements. With Sulzer, you can achieve true lifecycle economy, both in individual equipment and in the collection network as a whole.

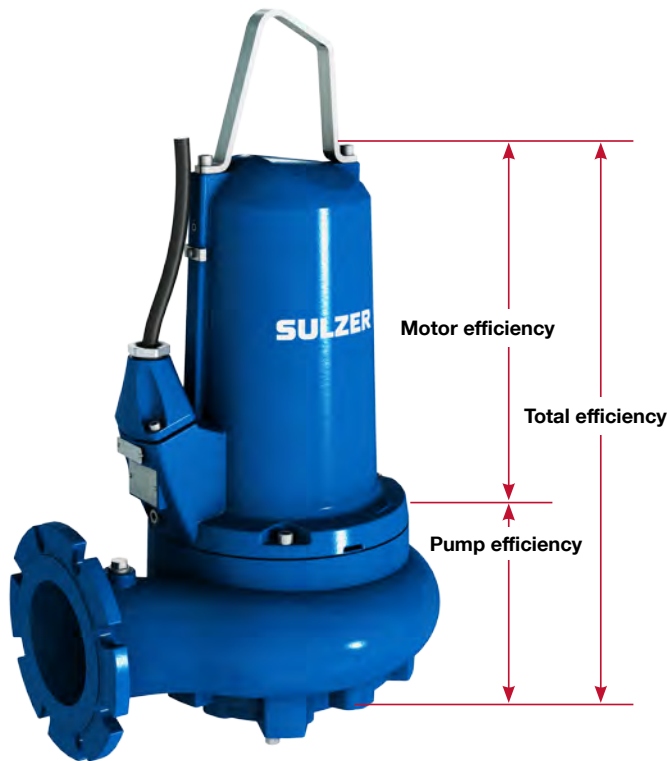
## Wastewater collection process



The task of a wastewater collection system is to route wastewater and storm water to a treatment plant or receiving waters. The collection system may handle both foul and storm water, or it may be designed with one line for wastewater and another for storm water and land drainage.

# Innovation Makes the Difference

Energy management and ensuring network reliability are key challenges in today's wastewater collection. Innovation from Sulzer can play a strong role in both.



## Two sides to total efficiency

Reducing energy costs and carbon footprint is in everyone's interest. But optimizing a pump for efficiency is no one-sided matter. It requires both motor efficiency and hydraulic efficiency – and the best of one means little if the other is ignored.

No pump balances these aspects more effectively than the submersible sewage pump type ABS XFP.

## Premium Efficiency as standard

A Premium Efficiency motor is the best way to reduce energy use, since it improves total efficiency without affecting the risk of blockage. This is why the XFP always comes with a Premium Efficiency IE3 motor. Sulzer introduced IE3 motors for submersible pumps, and only Sulzer provides them as standard.

Designed in accordance with IEC 60034-30 level IE3 with testing in accordance with IEC 60034-2-1, the motor ensures the best efficiency available and meets NEMA Premium standards. But it also operates at a lower temperature, which means reduced cooling, a better bearing environment, less thermal load on the stator and significantly increased component life.

## Efficient blockage resistance

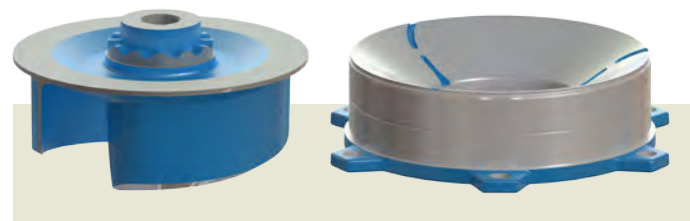
Over 60% of pump breakdowns are a direct result of blockage. This is why pump hydraulics have traditionally involved compromises between efficiency, rag handling and free solids passage. Yet Sulzer has arrived at a lasting solution.

The Contrablock Plus impellers utilized by the XFP offer some of the market's highest hydraulic efficiencies – combined with superior rag handling and a minimum free solids passage of 75 mm (3 inches) through the impeller. Designed with computational fluid dynamics (CFD) modeling and tested extensively on today's demanding wastewater, they provide first-rate performance that remains stable over time.

## Unmatched reliability

Together, the motor and hydraulics of the XFP create not only the highest energy efficiency, but also the greatest pump reliability. For your collection network this means:

- Reduced risk of overflows and pollution
- Reduced risk of interrupted service to customers
- Reduced breakdown costs
- Reduced tankering costs
- Reduced maintenance costs



Sulzer has a complete range of impellers to match your exact needs, including the Contrablock Plus models utilized by the submersible sewage pump type ABS XFP. Through computational fluid dynamics (CFD) modeling and extensive real-world blockage testing, the impellers are optimized for the best efficiency and reliability.





### A more complete pumping station

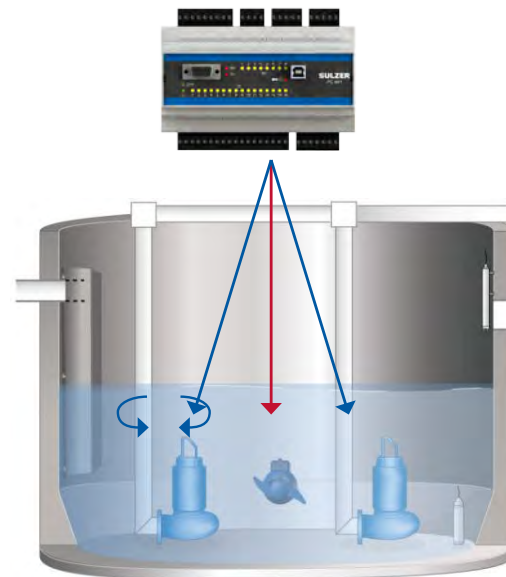
Pumps are not all that belongs in a pumping station. In many cases, a small amount of additional equipment can be a tremendous boost to station reliability.

A small submersible mixer, for example, can homogenize the waste in the sump and keep the solids from collecting. This reduces blockage by distributing the pumping of solids over the pumping period. Moreover, it inhibits the formation of corrosive and toxic gases, which protects equipment, electrical components and even the station's concrete.

### A smarter pumping station

For the greatest benefit, both the mixer and the pumps themselves can be connected to monitoring and control systems. This will provide valuable data for use in optimizing the pumping station, as well as functions that can be used to increase its reliability.

For example, a pump controller can automatically reverse the impeller's direction in the event of blockage. This may dislodge the intruding item. If the pump is connected to a variable-frequency drive, the reverse speed can even be set to a pre-defined rpm (rotations per minute), which will maximize the cleaning effect and minimize the chance of the item being pinned against the pump volute.



Functions like this can save energy and greatly reduce the hours spent on troublesome pumping stations. More about monitoring and control can be found on the following pages.

# Monitoring and Control Improve All Aspects

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*The right pumps are crucial to your network's efficiency and reliability, but they aren't your only tool. Sulzer monitoring and control systems are an easy way to boost and safeguard your network's performance.*

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## Monitoring keeps you informed

When you can see events in your network in real time, you can make decisions in time to make a difference. Monitoring systems from Sulzer let you look straight into your pump or pumping station, so that you can take the actions necessary.

Monitoring gives you instant access to alarms, pump status, level information and trends – both on site and remotely. With their help, you can prevent incidents and optimize your network's operation.

## Control saves you time, effort and money

Even better than seeing into in your network is being able to influence it. Control systems from Sulzer provide functions that help not only to prevent downtime and flooding, but also to reduce maintenance and energy costs.

Pumps and other equipment can be automatically started, stopped or regulated in many smart ways. Doing so increases pumping station availability, minimizes energy consumption and even reduces stress on the network downstream.

Naturally, our control systems can monitor as well. So you have the same instant access to alarms, trends and other important data.

## Sophisticated systems – yet easy to use

Many users are surprised by how much monitoring and control can improve their network. Perhaps even more surprising is how simple the systems are to implement.

Sulzer's monitoring and control solutions range from compact "all-in-one" systems to modular systems with expandable capabilities. All are easy to connect and configure, regardless whether you use them with one pump or several. Even non-Sulzer equipment can be connected, giving you all alarms and information in one place.

## Information at your fingertips

Best of all, there are many ways to access our monitoring and control systems. Configuration can be done on site via the control panel, or remotely using our PC software.

Alarms, logs, trends and other information can also be accessed remotely, using either PC software or your mobile phone. With Sulzer's AquaApp for Android or iPhone, you have the most important information in the palm of your hand – wherever you happen to be.

### How you can benefit

#### Collection network managers

- Reduced risk during peak loads
- Reduced equipment and labor costs
- Reduced tankering and energy costs

#### Collection network operators

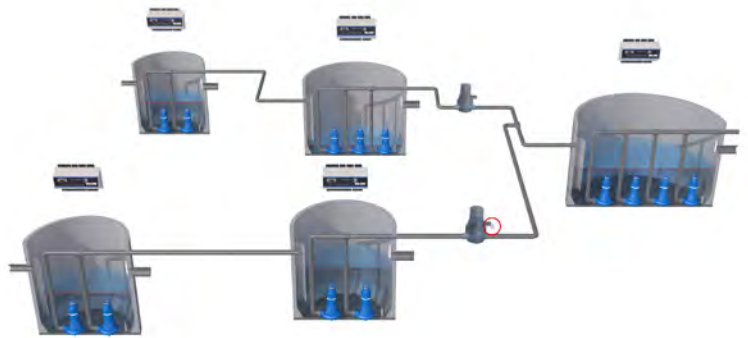
- Fewer emergency call-outs
- Reduced service needs
- Clear information for correct decisions

#### Technicians

- Easy installation
- Easy configuration
- Simple expansion and upgrading



- DI 2 electric area
- DI 3 motor housing
- DI 1 oil chamber
- T2 Hi Temp Up. Bearing
- T1 Hi Temp Stator
- T3 Hi Temp Lo. Bearing



## Monitor your pump

*Following the status of one pump or a group*

A monitoring system can be connected to a single pump for parameter-specific monitoring. Various alarm points can then be seen in the pump status screen, showing the temperature, current or other values for specific components.

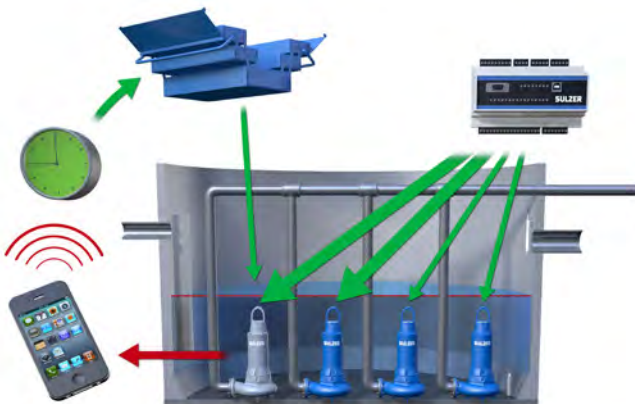
Alternatively, the system can be connected to multiple pumps, which will be monitored as a group. In this case, a general alarm will be issued if anything goes wrong within the group.

## Monitor your network

*Detecting flow deviations between pumping stations*

Leakages and overflows are not limited to pumping stations. Leakage can occur out of a pipeline, just as water can leak into a pipeline and add pressure downstream.

Using monitoring systems to measure the outflow at one station and the inflow at the next, any problem between can be quickly identified. If the pump energy consumption is also monitored, the actual pumping efficiency can be calculated as well.



## Control your pump

*Lowering the risk of total stops and repeated blockage*

Using a control system's asymmetric start function, one pump can be run for fewer hours than the others. This increases availability by reducing the risk of simultaneous breakdowns.

Alternatively, a pump that frequently clogs due to flows within the pumping station can be run more frequently, which will help to keep it blockage-free. If a breakdown does occur, the controller will send an SMS alert.



## Control your network

*Preventing flooding through intelligent level control*

During heavy rainfall, a control system can start and stop the pumps based on the speed of level change. If the water level rises more quickly than normal, pumping will begin before the set start point. If the water level drops more quickly than normal, pumping will stop before the stop point is reached.

This function prevents peak stress in both the pumping station and the network, because it spreads out the pumped volume over time.

# Whatever the Process, We Have the Solutions

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*You set the challenge, we provide the solution.*

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## Pressurized systems

Pressurized sewage systems are used where there is no direct access to gravity-based systems, or as an economical alternative to gravity sewers due to their smaller pipeline diameters and reduced excavation needs. Sulzer can determine the optimum pressurized system setup and the necessary sizes for pumps, pipelines and collection tanks.



## Network pumping stations

Network pumping stations collect municipal wastewater and deliver the effluent to a terminal pumping station. Since most stations are not equipped with screens, the pumps must cope with difficult solids and fibrous materials. Sulzer pumps improve station operation by ensuring blockage-free pumping with the lowest lifecycle cost.



## Terminal pumping stations

Terminal pumping stations receive municipal wastewater from network pumping stations and forward it to a treatment plant. Due to the lack of screens at most of them, solids and fibrous materials are a constant threat to up-time. Sulzer pumps improve station operation by ensuring blockage-free pumping with the lowest lifecycle cost.



### Storm water pumping stations



During heavy rainfall, storm water pumping stations deliver large volumes of water at low head to receiving surface waters or sewers. Skilled engineering is required in the design of the stations and their inflow chambers. Sulzer's Station Design Software assists in creating efficient and compact designs with optimum hydraulic performance.

### Storm water retention tanks



Storm water retention tanks act as a buffer during heavy rainfall, taking in the rainwater that cannot be absorbed. Gravity or pumps can then provide a reduced continuous flow into the sewer system. With Sulzer expertise, peak hydraulic loads and stresses on existing sewer systems can be limited.

### Monitoring and control



Monitoring and control devices provide functionality and data that can be used to improve the availability of pumps, pumping stations and entire collection networks. They reduce not only the risk of downtime and flooding, but also maintenance and energy costs. Sulzer has a complete range of easy-to-use pump controllers, measuring devices, panels and accessories.

# Our Comprehensive Product Portfolio

Product technology	Product name	Application	High-efficiency (IE3)	Class H insulation	Nema Class A
<b>Lifting stations</b>	Type ABS Synconta with Piranha/S	Pressurized systems			
<b>Submersible grinder pumps</b>	Type ABS Piranha/S	Pressurized systems			
	Type ABS Piranha/PE	Pressurized systems	✓	✓	✓
<b>Submersible sewage pumps</b>	Type ABS XFP 1.3-25 kW	Network pumping station Storm water pumping station Storm water retention tanks	✓	✓	✓
	Type ABS XFP 30-250 kW	Terminal pumping station Storm water pumping station Storm water retention tanks	✓	✓	●
	Type ABS AFP	Terminal pumping station Storm water pumping station Storm water retention tanks		●	
<b>Submersible mixed flow column pump</b>	Type ABS AFLX	Storm water pumping station	✓	✓	●
<b>Submersible propeller pumps</b>	Type ABS VUPX	Storm water pumping station	✓	✓	●
<b>Dry installed pumps</b>	Type ABS FR	Network pumping station Terminal pumping station Storm water pumping station Storm water retention tanks	●	●	●
	Type ABS AFC	Network pumping station Storm water pumping station Storm water retention tanks	●		✓
<b>Submersible mixers</b>	Type ABS RW 200 & RW 280	Terminal pumping station			
<b>Aerators</b>	Type ABS Venturi Jet	Storm water retention tanks	✓	✓	✓
<b>Pump selection software tool</b>	ABSEL	Network pumping station Terminal pumping station Storm water pumping station Storm water retention tanks			

Motor-related						Product facts on page page
Nema Class B	Long bearing life (>50,000 hours)	Sealed cable connection chamber	Full condition monitoring	Explosion proof	Axial flow pumps	
			●	●		17
			●	●		17
	✓		✓	✓		17
	✓	✓ / ●		✓		17
✓	✓	✓	✓ / ●	●		17
✓	✓	✓	✓	●		18
✓	✓	✓	✓ / ●	●	✓	18
✓	✓	✓	✓ / ●	●	✓	18
	✓		●			18
	✓		✓			19
			✓	●		19
	✓		✓			19
						19

✓ = Standard ● = Optional

# Our Comprehensive Product Portfolio

Controllers	Pressurized system	Network pumping station	Terminal pumping station	Storm water pumping station
Pump controller type ABS PC 111	✓	✓		
Pump controller type ABS PC 211	✓	✓		
Pump controller type ABS PC 242	✓	✓	✓	
Pump controller type ABS PC 441		✓	✓	✓
Control system type ABS PCX		✓	✓	✓

Measuring devices	Pressurized system	Network pumping station	Terminal pumping station	Storm water pumping station
Float switch type ABS KS	✓	✓	✓	✓
Pressure sensor type ABS MD 124	✓	✓		
Submersible pressure sensor type ABS MD 126	✓	✓	✓	✓
Submersible pressure sensor type ABS MD 127	✓	✓	✓	✓
Submersible pressure sensor type ABS MD 131	✓	✓	✓	✓

Control panels	Pressurized system	Network pumping station	Terminal pumping station	Storm water pumping station
Control panel type ABS 114	✓	✓		
Control panel type ABS 112 and 212	✓	✓		
Control panel type ABS 116 and 216	✓	✓		
Control panel type ABS 221			✓	

Monitoring	Pressurized system	Network pumping station	Terminal pumping station	Storm water pumping station
Graphical operator interface type ABS CA 511		✓	✓	✓
Moisture monitoring module type ABS CA 441		✓	✓	✓
Temperature monitoring module type ABS CA 442		✓	✓	✓
Leakage relay type ABS CA 461	✓	✓	✓	✓
Motor and supply power monitoring module type ABS CA 443		✓	✓	✓
Temperature and leakage relay type ABS CA 462		✓	✓	✓
GSM/GPRS tri-band modem type ABS CA 521	✓	✓	✓	✓

Accessories	Pressurized system	Network pumping station	Terminal pumping station	Storm water pumping station
Type ABS AquaApp		✓	✓	
Type ABS AquaProg, AquaWeb	✓	✓	✓	✓

A selection of products is available on pages 20-21. For information about the full range, visit [www.sulzer.com](http://www.sulzer.com)

✓ = Standard    ● = Optional



# Product Overview

## Lifting stations

### LIFTING STATION TYPE ABS SYNCONTA 700-902L

#### FEATURES AND BENEFITS

The Synconta 700-902L (with Piranha/S) is a single or double pumping station for automatic pumping of wastewater and sewage from locations and areas below the backwash level in accordance with EN 12050-1. The Synconta is ideal for applications where wastewater must be removed from buildings and areas below sewer level and where gravity discharge into the sewer is not possible

#### KEY CHARACTERISTICS

Discharge sizes DN 32-DN 50  
 Head 36 m  
 Capacity 18 m<sup>3</sup>/h



## Submersible pumps

### SUBMERSIBLE GRINDER PUMP TYPE ABS PIRANHA

#### FEATURES AND BENEFITS

Piranha sewage pumps with shredding action provide reliable and economical discharge of effluent under pressure in private municipal and communal schemes. They offer an economical alternative to gravity sewers, and improve environmental protection for pressurized sewer systems.

#### KEY CHARACTERISTICS

Discharge sizes G 1 ¼" / DN 32-DN 50  
 Head 71 m  
 Capacity 21 m<sup>3</sup>/h



### SUBMERSIBLE SEWAGE PUMP TYPE ABS XFP 1.3-25 KW

#### FEATURES AND BENEFITS

Submersible sewage pump type ABS XFP models PE1 to PE3 are designed for wet or dry installation in standard and network pumping stations. The XFP pumps use Premium Efficiency IE3 motors to offer significant energy savings, along with excellent rag handling, long-term reliability and a future-proof design.

#### KEY CHARACTERISTICS

Discharge sizes DN 80-DN 200  
 Motor range 1.3-25 kW  
 Bearing life up to 100,000 h



### SUBMERSIBLE SEWAGE PUMP TYPE ABS XFP (30-250 KW)

#### FEATURES AND BENEFITS

Submersible sewage pump type ABS XFP models PE4 to PE6 are designed for wet or dry installation in terminal pumping stations. The XFP pumps use Premium Efficiency IE3 motors to offer significant energy savings, along with excellent rag handling, long-term reliability and a future-proof design.

#### KEY CHARACTERISTICS

Discharge sizes DN 100-DN 600  
 Motor range 30-250 kW  
 Bearing life 100,000 h



## SUBMERSIBLE SEWAGE PUMP TYPE ABS AFP

### FEATURES AND BENEFITS

For reliable and economical pumping of heavily polluted sewage in commercial, industrial and municipal applications. The AFP pumps offer high sustainability and excellent rag handling, and power up to 550 kW.

### KEY CHARACTERISTICS

Discharge sizes DN 400-DN 800  
Motor range 110-550 kW  
Bearing life 100,000 h



## SUBMERSIBLE MIXED FLOW COLUMN PUMP TYPE ABS AFLX

### FEATURES AND BENEFITS

Save space and reduce installation costs with the AFLX range of submersible axial-flow pumps, designed for direct installation in compact rising mains. Available with Premium Efficiency IE3 motors. Featuring highly efficient three- to five-blade mixed flow impellers. The AFLX-pumps ensure high reliability and efficiency.

### KEY CHARACTERISTICS

Pipe diameter 600 to 1,200 mm and larger  
Motor range 7.5-650 kW  
Bearing life 100,000 h



## SUBMERSIBLE PROPELLER PUMP TYPE ABS VUPX

### FEATURES AND BENEFITS

The VUPX series of submersible propeller pumps are ideal for applications where large volumes of storm or process water have to be pumped to heads up to a maximum of 10 m. Available with Premium Efficiency IE3 motors. These compact pumps feature highly efficient three- or four-blade propellers and a space-saving design for direct installation in compact mains.

### KEY CHARACTERISTICS

Pipe diameter 600 to 1,200 mm and larger  
Motor range 7.5-650 kW  
Bearing life 100,000 h



## Dry-installed pumps

### DRY INSTALLED SEWAGE PUMP TYPE ABS FR

#### FEATURES AND BENEFITS

The FR dry-installed clogless pump enables economical pumping of heavily-polluted sewage and wastewater in municipal and industrial applications. It is ideal for pumping clear water, polluted water, and heavily-polluted sewage in commercial, industrial, and municipal applications.

#### KEY CHARACTERISTICS

Discharge sizes DN 150-DN 800  
Motor range up to 700 kW  
Bearing life 100,000 h



## DRY-INSTALLED SEWAGE PUMP TYPE ABS AFC

### FEATURES AND BENEFITS

The AFC dry-installed sewage pump is designed for pumping wastewater and sewage from buildings and sites in private, commercial, industrial, and municipal areas. With an air-cooled IEC motor from 3 to 22 kW, the pump can be installed either horizontally or vertically.

### KEY CHARACTERISTICS

Discharge sizes DN 50-DN 200  
 Motor range 3-22 kW  
 Bearing life 100,000 h



## Submersible mixers

### SUBMERSIBLE MIXER TYPE ABS RW 200 & RW 280

### FEATURES AND BENEFITS

This compact submersible mixer is ideal for a variety of mixing and stirring applications in sewage, including the prevention of deposits and floating crusts in pump sumps. One or more of the mixers, depending on the mixing intensity and flow formation, are suitable for cleaning sumps up to 5 m diameter or 24 m<sup>2</sup> of water surface area.

### KEY CHARACTERISTICS

Propeller diameter, max 280 mm  
 Motor range up to 2.8 kW  
 Mixing flow, max 0.15 m<sup>3</sup>/s



## Aerators

### AERATOR TYPE ABS VENTURI JET

### FEATURES AND BENEFITS

Based on the ejector principle, the Venturi jet aerator is an ideal solution for water depths from 1.5 m to 5 m. It provides cost-effective mixing and aeration in municipal and industrial wastewater applications, storm water retention tanks, and balancing tanks.

### KEY CHARACTERISTICS

Oxygen transfer 1-16 kg O<sub>2</sub>/h at 3 meter water depth  
 Motor range 1.3-18.5 kW  
 Bearing life 100,000 h



## Pump selection software tool

### SULZER INTERNET-BASED PUMP SELECTION SOFTWARE TOOL: ABSEL

### FEATURES AND BENEFITS

ABSEL is an internet-based software tool that allows users to select pumps for the wastewater industry. With ABSEL, you can select specific pumps by configuring the application area, pump series and duty point using the "Hydraulic Selection" function. Alternatively, you can navigate through our pump offering by using the "Pump Browser".



## Controllers

### PUMP CONTROLLER TYPE ABS PC 111 AND 211

#### FEATURES AND BENEFITS

The PC 111 and 211 are easy-to-use single (PC 111) and dual-pump controllers designed mainly for use in either gravitation or pressurized municipal wastewater pumping stations. Their numerous features improve pumping station functionality and reliability throughout its life-cycle.



### PUMP CONTROLLER TYPE ABS PC 242

#### FEATURES AND BENEFITS

The PC 242 is a two-pump controller designed mainly for use in either gravitation or pressurized municipal wastewater pumping stations. It has many advanced features to minimize costs in the pumping station throughout its entire life cycle.



### PUMP CONTROLLER TYPE ABS PC 441

#### FEATURES AND BENEFITS

The PC 441 is a monitor and controller for one to four pumps, designed mainly for use in municipal wastewater pumping stations. The PC 441 has many advanced features to minimize operating costs and increase the availability of the pumping station throughout its life cycle.



### CONTROL SYSTEM TYPE ABS PCX

#### FEATURES AND BENEFITS

PCx is a powerful, technically-advanced control system enabling scalable, flexible, and modular system buildup. It is suitable for applications such as small and medium-sized sewage treatment plants, water treatment plants, booster pressure stations, and sewage pumping stations.



## Measuring devices

Sulzer offers a wide range of measuring devices. For information about the full range, visit [www.sulzer.com](http://www.sulzer.com).

### SUBMERSIBLE PRESSURE SENSOR TYPE ABS MD 126, 127, 131

#### FEATURES AND BENEFITS

MD 126 and 127 are high-accuracy submersible hydrostatic level sensor. Encapsulated in stainless steel and resistant to sewage water, it is designed to measure levels in liquids such as storm water and wastewater in sump pumps.

MD 131 is a conductive level switch, primarily used as overflow switch in sewage pumping pits. The sensor head is made of PTFE to reduce the risk of clogging and therefore improving the overall availability.



## Control panels

Sulzer offers a wide range of control panels for one or two pumps. For information about the full range, visit [www.sulzer.com](http://www.sulzer.com).

### CONTROL PANEL TYPE ABS CP 112 AND 212

#### FEATURES AND BENEFITS

This compact control panel is used with one (CP 112) or two pumps (CP 212) conforming to ATEX. The panel is connected directly to pumps up to 5.5 kW (10 A), 3-phase and single-phase versions, and provides LED indication of power, pump run and alarm. The choice of water level control includes float switches, an analog (4-20 mA) sensor and built-in pressure sensor for closed or open air systems.



## CONTROL PANEL TYPE ABS CP 116 AND 216

### FEATURES AND BENEFITS

This compact control panel is used with either one (CP 116) or two pumps (CP 216) conforming to ATEX. An optional GSM/GPRS modem allows communication with an AquaWeb or SCADA system using Comli or Modbus protocol. The graphic color display enables intuitive menu navigation with arrow buttons. It has an 8-channel analog data logger (2 weeks capacity), and provides a one-week history on counters and accumulators (run time, start count and flow), as well as a time stamp on up to 4 000 pump and alarm events. The choice of water level control includes float switches, analog (4-20 mA) sensor and built-in pressure sensor for closed or open air systems.



## Monitoring

Sulzer offers a wide range of monitoring equipment for advanced monitoring of pumping stations. For information about the full range, visit [www.sulzer.com](http://www.sulzer.com).

## LEAKAGE RELAY TYPE ABS CA 461

### FEATURES AND BENEFITS

The CA 461 is designed to spy and detect leakage in pumps and mixers. The amplifier is housed in a norm enclosure fitted for DIN-rail mounting. The unit is available in two executions, 24 VDC or 110-230 VAC supply.



## TEMPERATURE & LEAKAGE RELAY CA 462

### FEATURES AND BENEFITS

The CA 462 is designed to spy and detect temperature and leakage in pumps and mixers. The amplifier is housed in a norm enclosure fitted for DIN-rail mounting. The unit is available in two executions, 24 VDC or 110-230 VAC supply.



## Accessories

### TYPE ABS AQUAAPP

#### FEATURES AND BENEFITS

Local Wi-Fi, Bluetooth or Internet based connection to ABS Control & Monitoring equipment. Graphical pump and pit status indication for 1-4 pumps. View Events and Alarms including acknowledgement. Visual representation of electrical properties.



### TYPE ABS AQUAPROG, AQUAWEB

#### FEATURES AND BENEFITS

ABS AquaProg is a Windows based software specially developed for configuration and software upgrade of Sulzer substations. Communication with the controllers are established via RS 232, USB, Modem (Analog, GPRS / 3G) or Ethernet.

ABS AquaWeb is a web based Monitoring and Surveillance system with as well remote control and Alarm handling capabilities. It's a whole range of services including pump controllers, modems, communication server with a web interface.



# Services for Equipment Lifetime and Economy

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*Sulzer is the expert not only when it comes to supplying your equipment, but also when it comes to supporting it throughout its life cycle. Our tailored service and maintenance offering extends from simple workshop repairs to complete operation and maintenance framework agreements for your wastewater collection network.*

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## Equipment installation services

Installing wastewater handling equipment is a complex and even dangerous task, where poor quality work can increase running costs, lower reliability and shorten equipment life. Sulzer's well-trained and well-equipped engineers ensure a safe and problem-free installation, and they can support your own personnel with operating guidance and recommendations for the most cost-effective maintenance. Our services cover:

- Equipment installation (mechanical)
- Equipment installation (electrical)
- On-site commissioning and testing

## Routine maintenance contracts

Regular maintenance of pumps and other wastewater equipment reduces the risk of breakdowns and emergency call-outs. Sulzer's planned maintenance services thus ensure lower, more predictable costs – and fewer customer complaints. Whether regularly visiting your site to check equipment condition or performing planned overhauls to restore equipment operation, our engineers work with maximum efficiency and minimum disruption on site. We offer:

- On-site maintenance and repair
- Site and equipment surveys
- Energy management services

## Spare parts and spares kits

A key element of effective maintenance is having essential spare parts on hand whenever your personnel need them. Sulzer has extensive central stocks and efficient logistics that guarantee quick delivery of commonly used parts, as well as software tools and technical expertise to assist in equipment identification and parts selection. For the

greatest simplicity, we offer a range of kits with everything needed to service your equipment. We provide:

- Spare parts
- Spares kits
- Service kits
- Upgrade kits
- Strategic spares recommendations

## Workshop services

Sulzer has an extensive network of workshops that places us close to you for rapid response. Staffed by highly trained engineers and closely partnered with our manufacturing centers, our workshops are equipped to repair and refurbish all types of wastewater equipment. They restore high-value equipment to “as-new” condition, using only the manufacturer's original spare parts for the highest reliability and lowest energy consumption. Our workshops perform:

- Repairs of Sulzer equipment
- Repairs of non-Sulzer equipment
- Repairs of explosion-proof equipment
- Installation and removal
- Commissioning and testing after repair

## Replacement and upgrade services

As equipment ages, it costs more to run. Spare parts become expensive and lead times longer, while performance falls behind that of the latest products. Sulzer's technical support staff can help you identify and prioritize replacement or upgrade opportunities, so that you choose the most appropriate equipment at the most appropriate time. Besides recommending and supplying the equipment, we can take full responsibility for its installation and commissioning if desired. We can provide:

- Replacement equipment
- Adapter brackets and guide-rail replacement
- Selection assistance and technical support
- Full contract management

# Your Ideal Service Partner

Our commitment and expertise always delivers reliability, responsiveness, rapid turnaround and innovative solutions.

