



Water and wastewater solutions

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# Take full control of your wastewater collection

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Today's wastewater contains less water but more solids and fibrous materials, which places tough new demands on collection networks. Sulzer has the solutions for maximum reliability – and energy efficiency. [sulzer.com/collection](https://www.sulzer.com/collection)



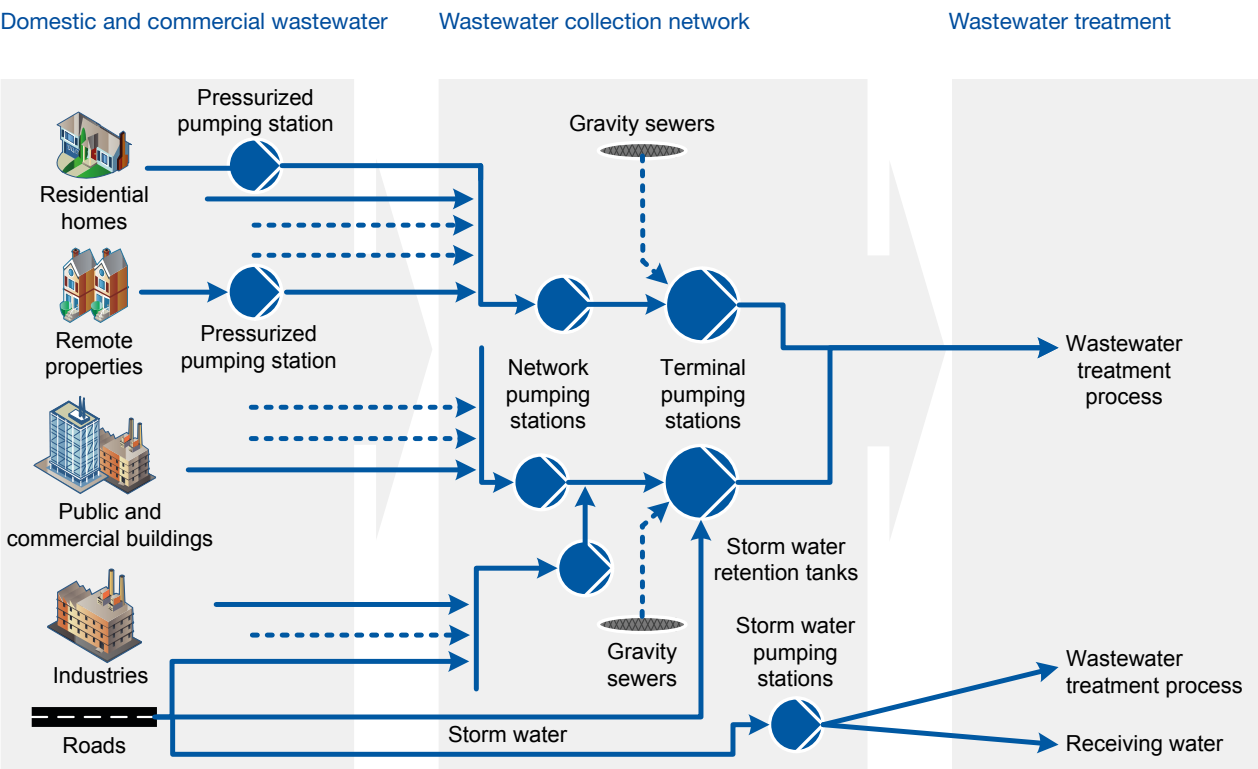
# Driving innovation in wastewater collection

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.

We continuously strive 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.



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.

# Facing the challenges of the changing world

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## 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



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## Business

You face financial challenges and the service demands of your customers.

- Reducing energy costs
- Lowering operating costs
- Improving service levels
- Municipal vs. private structures
- Replacements and upgrades



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## Social

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

- Water consumption
- Personal hygiene
- Environmental protection
- Sustainability



# 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. We can determine the optimum pressurized system setup and the necessary sizes for pumps, pipelines and collection tanks.



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## 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.



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## 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 uptime. Sulzer pumps improve station operation by ensuring blockage-free pumping with the lowest lifecycle cost.



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## Flood control 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.



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## 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.



# Our comprehensive product portfolio

| Product technology                  | Product name                     | Application   | High-efficiency (IE3) |
|-------------------------------------|----------------------------------|---|-----------------------|
| Lifting stations                    | Type ABS Synconta with Piranha/S | Pressurized systems   |                       |
| Submersible grinder pumps           | Type ABS Piranha/S               | Pressurized systems   |                       |
|                                     | Type ABS Piranha/PE              | Pressurized systems   | ●                     |
| Submersible sewage pumps            | Type ABS XFP 1.3-35 kW           | Network pumping station<br>Storm water pumping station<br>Storm water retention tanks                             | ●                     |
|                                     | Type ABS XFP 15-620 kW           | Terminal pumping station<br>Storm water pumping station<br>Storm water retention tanks                            | ●                     |
|                                     | Type ABS AFP                     | Terminal pumping station<br>Storm water pumping station<br>Storm water retention tanks                            |                       |
| Submersible mixed flow column pumps | Type ABS AFLX                    | Storm water pumping station   | ●                     |
| Submersible propeller pumps         | Type ABS VUPX                    | Storm water pumping station   | ●                     |
| Dry installed pumps                 | Type ABS FR                      | Network pumping station<br>Terminal pumping station<br>Storm water pumping station<br>Storm water retention tanks | ●                     |
| Submersible mixers                  | Type ABS RW 200 & RW 280         | Terminal pumping station  |                       |
| Aerators                            | Type ABS Venturi Jet             | Storm water retention tanks   | ●                     |
| Sewage grinders                     | Inline Muffin Monster™           | Network pumping station<br>Terminal pumping station   |                       |
|                                     | Open channel Muffin Monster™     | Network pumping station<br>Terminal pumping station<br>Storm water pumping station                                |                       |
|                                     | Channel Monster™                 | Network pumping station<br>Terminal pumping station<br>Storm water pumping station                                |                       |
| Pump selection software tool        | ABSEL                            | Network pumping station<br>Terminal pumping station<br>Storm water pumping station<br>Storm water retention tanks |                       |

● Standard ● Optional

| Motor-related      |              |              |                                   |                                 |                           |                 |            | Product facts on page |
|--------------------|--------------|--------------|-----------------------------------|---------------------------------|---------------------------|-----------------|------------|-----------------------|
| Class H insulation | Nema class A | Nema class B | Long bearing life (>50'000 hours) | Sealed cable connection chamber | Full condition monitoring | Explosion proof | Axial flow |                       |
|                    |              |              |                                   |                                 | ●                         | ●               |            | 9                     |
|                    |              |              |                                   |                                 | ●                         | ●               |            | 9                     |
| ●                  | ●            |              | ●                                 |                                 | ●                         | ●               |            | 9                     |
| ●                  | ●            |              | ●                                 | ●●                              |                           | ●               |            | 9                     |
| ●                  | ●            | ●            | ●                                 | ●                               | ●●                        | ●               |            | 10                    |
| ●                  | ●            | ●            | ●                                 | ●                               | ●                         | ●               |            | 10                    |
| ●                  | ●            | ●            | ●                                 | ●                               | ●●                        | ●               | ●          | 10                    |
| ●                  | ●            | ●            | ●                                 | ●                               | ●●                        | ●               | ●          | 10                    |
| ●                  | ●            |              | ●                                 |                                 | ●                         |                 |            | 11                    |
|                    |              |              |                                   |                                 | ●                         | ●               |            | 11                    |
| ●                  | ●            |              | ●                                 |                                 | ●                         |                 |            | 11                    |
|                    |              |              |                                   |                                 |                           | ●               |            | 12                    |
|                    |              |              |                                   |                                 |                           | ●               |            | 12                    |
|                    |              |              |                                   |                                 |                           | ●               |            | 12                    |
|                    |              |              |                                   |                                 |                           |                 |            | 14                    |

# Our comprehensive product portfolio

| Product                  |   | Pressurized system | Network pumping station | Terminal pumping station | Storm water pumping station |
|--------------------------|---|--------------------|-------------------------|--------------------------|-----------------------------|
| Controllers              | Pump controllers type ABS PC 111 and PC 211             | ●                  | ●                       |                          |                             |
|                          | Equipment controller EC 531                             | ●                  | ●                       | ●                        | ●                           |
|                          | BlueLinQ Pro controller                                 |                    | ●                       | ●                        | ●                           |
| Measuring devices        | Float switch type ABS KS                                | ●                  | ●                       | ●                        | ●                           |
|                          | Pressure sensor type ABS MD 124                         | ●                  | ●                       |                          |                             |
|                          | Submersible pressure sensors type ABS MD 126 and MD 127 | ●                  | ●                       | ●                        | ●                           |
|                          | Conductive level switch type ABS MD 131                 | ●                  | ●                       | ●                        | ●                           |
| Control panels           | Control panels type ABS CP 112 and CP 212               | ●                  | ●                       |                          |                             |
|                          | Control panels type ABS CP 116 and CP 216               | ●                  | ●                       |                          |                             |
| Monitoring               | Leakage control type ABS CA 461                         | ●                  | ●                       | ●                        | ●                           |
|                          | Temperature and leakage relay type ABS CA 462           |                    | ●                       | ●                        | ●                           |
|                          | BlueLinQ DI-12 module* (Digital In)                     |                    | ●                       | ●                        | ●                           |
|                          | BlueLinQ DO-8 module* (Digital Out)                     |                    | ●                       | ●                        | ●                           |
|                          | BlueLinQ AI-6 module* (Analogue In)                     |                    | ●                       | ●                        | ●                           |
|                          | BlueLinQ AO-6 module* (Analogue Out)                    |                    | ●                       | ●                        | ●                           |
|                          | BlueLinQ TI-6 module* (Temperature In)                  |                    | ●                       | ●                        | ●                           |
|                          | BlueLinQ LI-6 module* (Leakage In)                      |                    | ●                       | ●                        | ●                           |
| 4G/LTE modem type CA 524 | ●   | ●                  | ●                       | ●                        |                             |

● Standard

\* can only be used in combination with the BlueLinQ Pro controller  
 A selection of products is available on page 13. For more information about the full range, visit [www.sulzer.com](http://www.sulzer.com).



# Product overview

## Lifting stations

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### Lifting station type ABS Synconta 700-902

#### Features and benefits

The Synconta 700-902 (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

|                       |                        |
|-----------------------|------------------------|
| Synconta inflow ports | 3 x DN 150, 1 x DN 200 |
| Synconta 902 capacity | 977 litres             |



## Submersible pumps

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### 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 50 Hz      | up to 71 m           |
| Head 60 Hz      | up to 81 m           |
| Capacity 50 Hz  | up to 21 m³/h        |
| Capacity 60 Hz  | up to 28 m³/h        |



### Submersible sewage pump type ABS XFP (1.3-35 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 50 Hz | 1.3-30 kW       |
| Motor range 60 Hz | 2.0-35 kW       |
| Bearing life      | up to 100'000 h |



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## Submersible sewage pump type ABS XFP (15-620 kW)

### Features and benefits

Submersible sewage pump type ABS XFP models PE4 to PE7 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 800 |
| Motor range 50 Hz | 15-550 kW     |
| Motor range 60 Hz | 17-620 kW     |
| Bearing life      | 100'000 h     |



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## 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.

### Key characteristics

|                   |               |
|-------------------|---------------|
| Discharge sizes   | DN 400-DN 800 |
| Motor range 50 Hz | 160-550 kW    |
| Motor range 60 Hz | 160-620 kW    |
| Bearing life      | 100'000 h     |



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## 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 50 Hz | 7.5-500 kW                 |
| Motor range 60 Hz | 14-468 kW                  |
| Bearing life      | 100'000 h                  |



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## 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 1'400 mm and larger |
| Motor range 50 Hz | 9-650 kW                   |
| Motor range 60 Hz | 14-750 kW                  |
| Bearing life      | 100'000 h                  |



## Dry-installed pumps

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### 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     |



## Submersible mixers

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### Submersible mixer type ABS RW 200 and 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 50 Hz | max 200 mm              |
| Propeller diameter 60 Hz | max 250 mm              |
| Motor range 50 Hz        | up to 2.5 kW            |
| Motor range 60 Hz        | up to 2.8 kW            |
| Mixing flow 50 Hz        | 0.135 m <sup>3</sup> /s |
| Mixing flow 60 Hz        | 0.15 m <sup>3</sup> /s  |



## Aerators

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### 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 50 Hz | 1.3 to 18.5 kW                                   |
| Motor range 60 Hz | 2 to 20 kW                                       |



## Sewage grinders

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### Muffin Monster™ – Inline

#### Features and benefits

Inline Muffin Monster grinders are used for protecting dry installed pumps within pumping stations as well as equipment within the sludge systems of treatment plants. The dual-shafted, slow-speed and high-torque grinder shreds debris that can damage centrifuges as well as clog pumps, valves, heat exchangers and other equipment.

#### Key characteristics

|             |                               |
|-------------|-------------------------------|
| Capacities  | up to 1'558 m <sup>3</sup> /h |
| Connections | 100 to 500 mm                 |
| Pressures   | 10.3 bar max dry working      |



### Muffin Monster™ – Open channel

#### Features and benefits

Dual-shafted, slow-speed and high-torque Muffin Monster grinders shred tough solids in wastewater to protect pumps and other critical equipment from clogs and damage. Open channel Muffin Monsters are utilized in network and inlet pump stations, installed ahead of the pump before damaging solids can reach the pump.

#### Key characteristics

|                 |                               |
|-----------------|-------------------------------|
| Capacities      | up to 1'277 m <sup>3</sup> /h |
| Cutting chamber | up to 1'500 mm                |



### Channel Monster™

#### Features and benefits

High-flow Channel Monster grinders protect large wastewater pump stations and treatment plants from damaging solids. A rotating screening drum allows fluid to pass through while capturing solids and diverting them to the powerful dual-shafted grinder for shredding. Channel Monsters can protect headworks screens from damage or replace screens completely in pump stations.

#### Key characteristics

|                 |                               |
|-----------------|-------------------------------|
| Capacities      | up to 9'305 m <sup>3</sup> /h |
| Cutting chamber | up to 2'250 mm                |
| Bearing life    | 100'000 h                     |



## Monitoring and control equipment

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### Leakage control type ABS CA 461

#### Features and benefits

The CA 461 is designed to detect leakages 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.

#### Key characteristics

- Supports one moisture signal input
- Leakage detection threshold (+/- 10%): < 100 kohm
- Leakage alarm delay: 10 sec.



### Temperature and leakage relay type ABS CA 462

#### Features and benefits

The CA 462 is designed to monitor and detect temperature changes and leakages 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.

#### Key characteristics

- Supports one moisture signal input and one temperature signal input
- Leakage detection threshold (+/- 10%): > 3.3 kohm (PTC/Klixon)
- Leakage alarm delay: 10 sec.



### Pump controller type ABS PC 111 and 211

#### Features and benefits

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

#### Key characteristics

- Supports start/stop of one pump (PC 111) or two pumps (PC 211) based on floats or level sensor
- Built-in Hand-0-Auto switch
- Alpha numerical display
- Built-in moisture and temperature monitoring



### Equipment controller EC 531

#### Features and benefits

The equipment controller EC 531 is an all-in-one unit for monitoring and control of one or two pumps. It is designated primarily for municipal pumping stations. The digital display and monitoring module provides key status values, as well as quick access to a week's history on counters and accumulators (including run time, start count, flow and analog history logging).

#### Key characteristics

- Supports one to two pumps
- 2.2" graphical display
- Supervises motors with multiple combination of built-in sensors
- Up to 1'024 pump and alarm events
- Datalogger with 16-channel, 2-week local storage capacity with one minute sampling
- Event crash log functionality with one second sampling

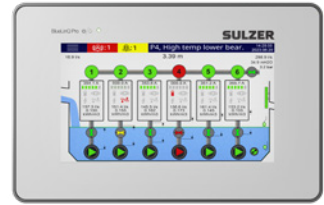


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## BlueLinQ Pro controller

### Features and benefits

The BlueLinQ Pro can control up to six pumps, mixers and valves. The compact controller has many advanced features to reduce operating costs and improve pump station availability. The touchscreen provides key status values, as well as quick access to a week's history on counters and accumulators (including run time, start count, flow, and analog history logging). All configurations can be managed via the local display.



### Key characteristics

- Supports one to six pumps, mixers or valves
- 7" touchscreen interface
- Configures and monitors equipment with multiple combinations of built-in sensors
- For up to 4'000 pump and alarm events
- Datalogger with 32-channel, 4-week local storage capacity with one minute sampling
- Event crash log functionality with one second sampling

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## Control panel type ABS CP 112 and 212 / CP 116 and 216

### Features and benefits

These compact control panels are used together with one pump (CP 112, CP 116) or two pumps (CP 212, CP 216), conforming to ATEX. The panels are 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. On CP 116-216 a graphic color display enables intuitive menu navigation with arrow buttons as well as a time stamp on up to 4'000 pump and alarm events.



### Key characteristics

- Supports one or two pumps
- CP 116-216 with 8-channel analog, 2-week local storage capacity
- Ex-version available

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## Submersible pressure sensor type ABS MD 126, 127, 131

### Features and benefits

The MD 126 and 127 are highly accurate submersible hydrostatic level sensors. Encapsulated in stainless steel and resistant to sewage water, they are designed to measure levels in liquids such as storm water and wastewater in pump sumps.

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

### Key characteristics

MD 126 level sensor

- 2-wire, 4-20 mA
- 9-30 VDC
- Inaccuracy:  $\leq \pm 0.3\%$  F.S.
- Diameter: 28 mm

MD 127 level sensor

- 2-wire, 4-20 mA
- 9-30 VDC
- Inaccuracy:  $\leq \pm 0.2\%$  F.S.
- Diameter: 40 mm

MD 131 level switch

- Sensitivity: 25  $\mu$ S-750  $\mu$ S
- Transistor output, NPN and PNP



# A committed partner for full-service, life-cycle solutions

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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. By bringing together OEM technical know-how with deep process and industry expertise, Sulzer has the unique ability to understand the intricacies of your wastewater collection network and help you get the best performance from your assets.

Working closely with our customers, we take a holistic view and proactively seek to realize economic, reliability, efficiency, sustainability and digitalization gains for your benefit.

Our tailored service and maintenance offering extends from workshop repairs, complete operation and maintenance framework agreements, to consulting, energy audits and operating advice. Complimented by service centers and partners in every region, our local workforce actively engages with the dynamics, needs and interests of each market to deliver best-in-class solutions that are backed by global resource and capability.

Blending our subject matter expertise, proprietary physical and digital innovations, and customer-centric approach, you can rely on us to deliver consistent, high-quality service solutions to support you in an everchanging market.



## Workshop repairs

- Extensive network of workshops close to you for rapid response
- Staffed by highly trained engineers, closely partnered with our manufacturing centers
- Repair and refurbish all types of Sulzer and non-Sulzer wastewater equipment
- Backed by OEM expertise, repaired products are updated to the newest standards
- Restore high-value equipment to “as-new” condition

## Onsite services

- Onsite installation, refurbishment, commissioning and preventive maintenance
- Onsite repairs for Sulzer and non-Sulzer equipment
- Customizable long-term maintenance and/or service contracts for peace of mind, with the right features and scope to meet your equipment, plant and business needs
- Breakdown services
- Energy audits, analysis, and improvement advice

## Spare parts and spares kits

- Extensive central stocks and efficient logistics guarantee quick delivery of commonly used parts
- A range of kits with everything needed to service or upgrade your equipment
- Original spare parts for the highest reliability and lowest energy consumption
- Strategic spares recommendations

## Rental solutions

- Temporary and hire equipment for maximum flexibility

## Service training

- Tailored training courses, available online, at a Sulzer facility, or preferred customer location

## Remote services

- Monitoring, troubleshooting, optimization and analysis in combination with a service agreement for seamless support

**The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.**

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The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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