Product guide 2021

Products for chemical fluid handling,
water treatment and water disinfection

ProMinent®

Inventive, progressive and global

Our foundation

The foundation of ProMinent's global success story is high-quality products based on decades of engineering expertise, an in-depth understanding of applications and continuous innovation. The group of companies therefore invests continuously in research and development. ProMinent also has a high degree of vertical integration at its twelve production sites worldwide, including Heidelberg, guaranteeing outstanding levels of quality for our customers and ensuring our independence from fluctuations in supplier markets.

Our commitment

We are passionately committed to environmentally sound, sustainable and cost-effective solutions for metering technology and water treatment. In more than 100 countries, around 2,700 employees in our own sales, production and service companies work hard to deliver fast and reliable service for every product, day in, day out. Because the ProMinent group's position as a global market leader means a continuous commitment to excellent products and services and an obligation to think and act responsibly.

Our aim

The modular ProMinent range, integrated in carefully designed solutions, enables our customers in a wide range of industries to achieve maximum safety and efficiency in their production processes, at all times and in any location. For us, customer proximity means working with customers to find the right solution for their individual needs. Personal, practical advice and smooth project handling are as much a part of our offering as our worldwide customer service.
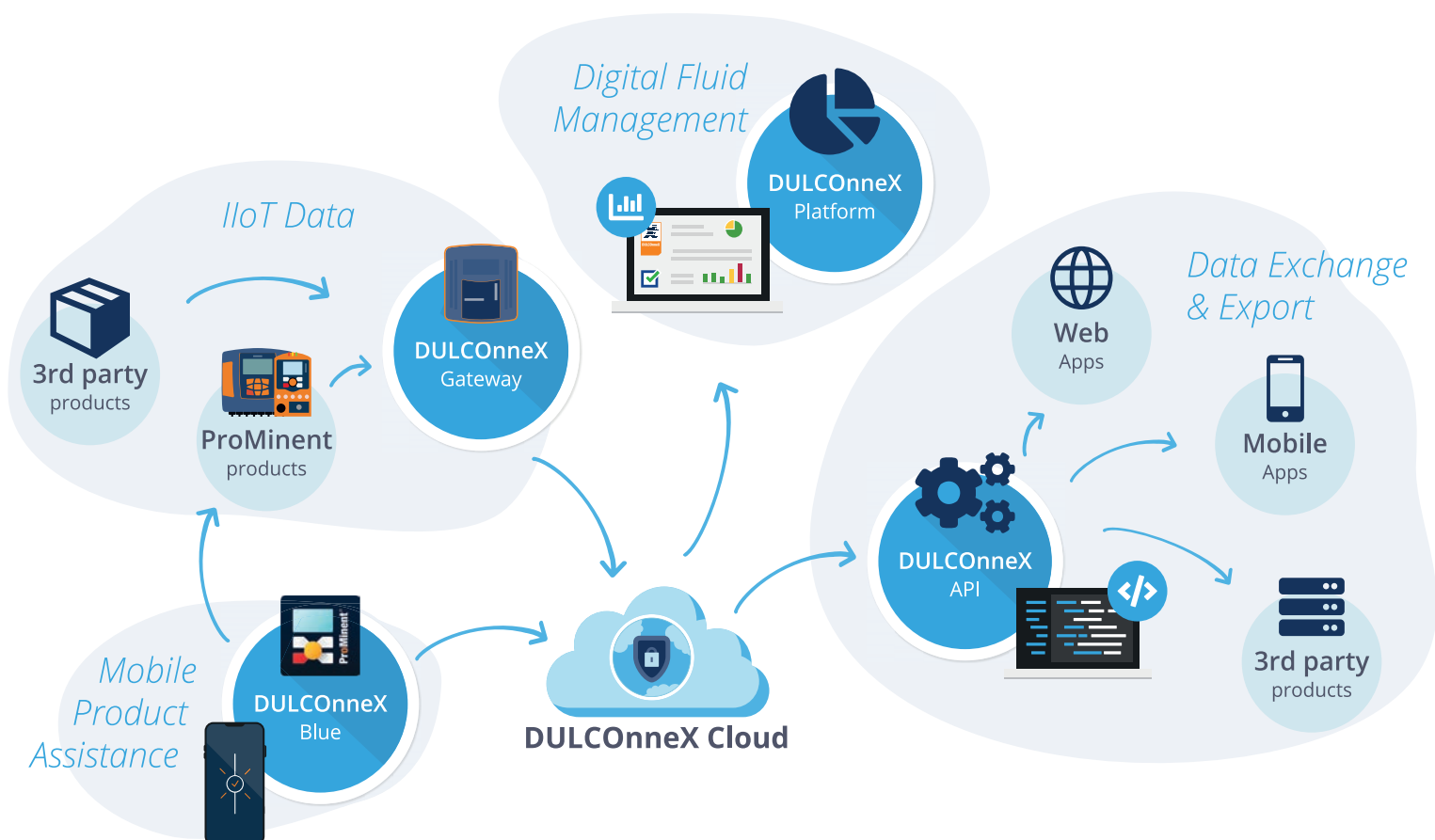
Contents

Digital solutions

DULCOnneX –
The cloud-based IIoT* solution for your digital fluid management

The complete solution for the digital networking of system components comprises the following four elements: DULCOnneX Platform, DULCOnneX Gateway, DULCOnneX API and the mobile app DULCOnneX Blue.
Combining DULCOnneX Gateway and DULCOnneX Platform gives you access to your system data in the DULCOnneX Cloud. DULCOnneX API allows you to query your system data in a raw format and integrate it into other digital solutions. You can use the mobile app DULCOnneX Blue to control systems with networking capability via Bluetooth using a smartphone.

Digital Fluid Management

DULCOnneX
Platform

IIoT Data

3rd party
products

ProMinent
products

DULCOnneX
Gateway

Data Exchange & Export

Web
Apps

Mobile
Apps

DULCOnneX
API

Mobile Product Assistance

DULCOnneX
Blue

DULCOnneX Cloud

3rd party
products

* Industrial Internet of Things

DULCOnneX –
Extended connectivity

You can connect just about anything that can communicate using industrial standard signals (digital & analogue I/Os, 4…20mA) or meters with DULCOnneX.

Additional components, such as older ProMinent products (CDLb, DACa, etc.) or even products from external providers, such as pressure sensors, level/flow meters, etc. can be connected using I/O modules.

Local signal systems can also be activated using relays, visually and acoustically.

Data security

The architecture of DULCOnneX is already designed to achieve maximum safety and reliably protect your data. All measured values and device data are anonymised and transmitted via RSA 2048-bit encryption using a secure WPA2 WLAN connection, where a state-of-the-art security protocol (TLS1.2) ensures secure transmission to the cloud. There is also systematic separation of user-specific data and measured values. All measured values are anonymised internally and the entire system is regularly inspected by professional IT security experts.

Product supported
as standard

Pumps
- gamma/ X
- gamma/ XL
- Sigma X
- DULCO flex Control – DFXa
- DULCO flex Control – DFYa
- DULCO®flex DF4a

Controllers
- AEGIS II
- DULCOMETER® diaLog DACb

Water treatment and disinfection systems
- UV systems Dulcodes LP/LP-PE/LP certified /LP F&B
- UV systems Dulcodes MP
- Chlorine dioxide systems Bello Zon® CDKd/CDVd
- Chlorine dioxide system Bello Zon® CDLb
- Electrolysis system Chlorinsitu IIa 60–2500 g/h

DULCOnneX Platform –
Digital fluid management

DULCOnneX Platform is the web-based solution for safely and reliably monitoring your equipment via a smartphone, tablet or computer without having to install additional software. Accessed via a personal customer account, the platform offers numerous auxiliary functions and benefits.

- Information about various installation locations in "one" place
- Verification of the metering of chemicals and device performance
- Continuous logging of system operation and device status
- Complete history of measured values, parameters and events
- Automatically generated reports in file formats which can be exported
- Configurable alarms and messages by e-mail
- Remote monitoring of devices in potentially dangerous environments

DULCOnneX Platform can be accessed at https://dulconnex.prominent.com.
Please contact us for a demonstration by e-mailing dulconnex@prominent.com
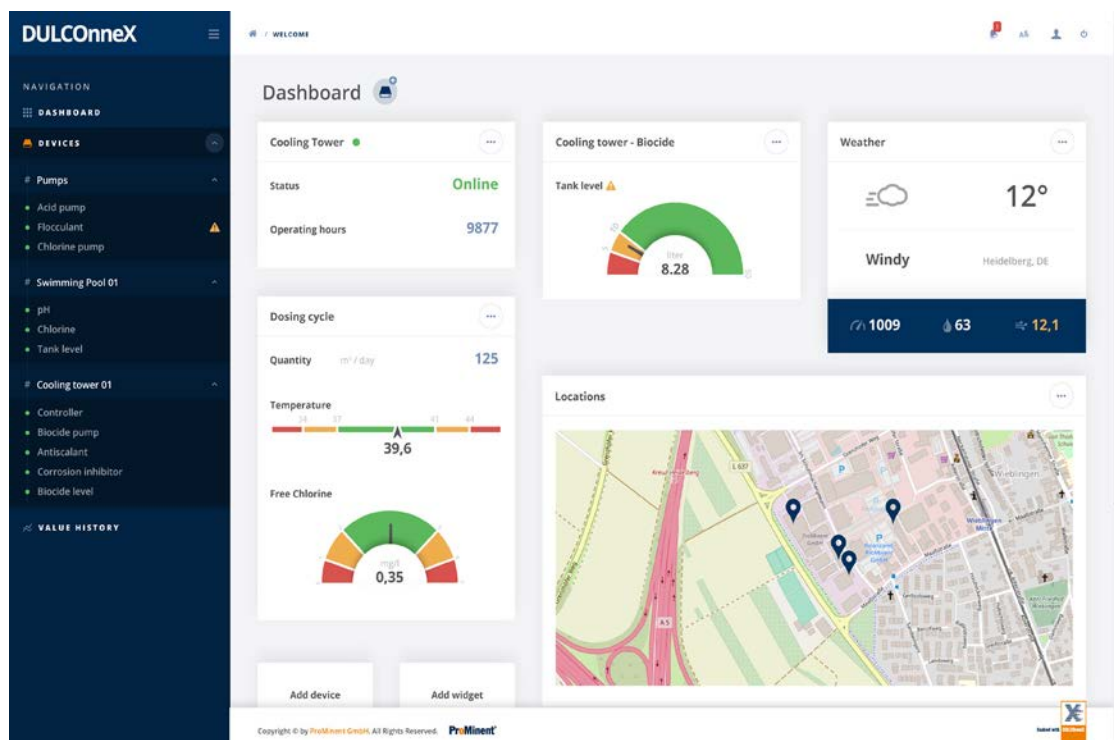
DULCOnneX Gateway –
IIoT data

DULCOnneX Gateway is the key hardware element for integrating IIoT data from smart ProMinent devices and external provider products. It connects your devices and safely and reliably transfers data from your systems to the DULCOnneX Cloud:
Using SSL/TLS encryption and a secure WLAN connection, the device data is transmitted to an available local access point with Internet access. From this access point, the encrypted flow of data is then transmitted via a secure Internet connection to the DULCOnneX Cloud.

www.prominent.com/en/dulconnex-gateway

DULCOnneX API -
Data exchange and export

DULCOnneX API is an optional function from DULCOnneX and allows you to access raw data from your systems. This can be integrated into existing local process control systems or any digital third-party solutions.
The preferred technical solution offering maximum flexibility and security is what is known as "Pull-API". Here the encrypted raw data is made available to you at a secure node point and you can call it up as and when you need to.

DULCOnneX Blue –
Mobile product support

The mobile app "DULCOnneX Blue" turns smartphones into a central control unit and allows - in a first step - the convenient operation of the solenoid-driven metering pump gamma/X. The pump is controlled via a smartphone with an Android or iOS operating system using Bluetooth. Other DULCOnneX-compatible products and additional features will be added shortly as part of continuous development of the app.

An overview of the most important features:

- Remote operation: Remote access to ProMinent products
- Intuitive user interface for convenient operation
- Dashboard: for an overview of all devices
- Available in DE, EN, FR, ES; other languages are being planned
- Access data and restore settings at any time
- Rapid commissioning of pumps
- Permanent access to product-related downloads

The all-rounders:
metering pumps and metering systems

How do metering pumps work?

Most metering pumps are oscillating displacement pumps or peristaltic pumps. With oscillating displacement pumps (diaphragm pumps/plunger pumps), an exactly defined volume of liquid is drawn into the displacement body on the reciprocal stroke and forced into the metering line on the compression stroke. The pump settings can be changed to achieve consistently accurate metering.
With a peristaltic pump, an exactly defined volume is pumped by clamping and squeezing a hose. Liquid is drawn in again by raising the hose into a neutral position.

Microprocessor technology since 1988

The accurate control of the pumps is made possible by microprocessor technology. Sophisticated monitoring functions ensure operational reliability and guarantee minimal chemical consumption yet optimum disinfection. Interfaces integrate the pumps into a fully automated process.

Over one million ProMinent pumps are in use all over the globe, delivering reliable, accurate performance under the toughest conditions. Our proven design principles guarantee a high standard of quality and precision.

Overview of low-pressure metering pumps

Diaphragm metering pumps are available in capacities ranging from 0.74 to 80 l/h at a back pressure of 25 to 2 bar. To be able to meter almost any liquid chemicals, ProMinent uses a very extensive range of materials.

Solenoid-driven metering pump Beta®

All-purpose solenoid metering pump for the metering of liquid media in water treatment and chemical processes: solenoid-driven metering pump Beta®.Cost-effective, protected against overload, can be adapted to the signal transducers present.

- Capacity range: 0.74 – 32 l/h, 25 – 2 bar

Solenoid-driven metering pump gamma/ X

Discover a metering pump that sets new standards in productivity, reliability and cost-effectiveness.

- Capacity range: 2.3 l/h – 45 l/h, 25 – 2 bar

Solenoid-driven metering pump gamma/ XL

gamma/XL is the big brother to gamma/X. It has the same intelligence and connectivity yet extends the capacity range of the gamma/X upwards.

- Capacity range 8 – 80 l/h, 25 – 2 bar

Flow meter DulcoFlow®

The flow meter DulcoFlow® reliably measures pulsating flows in the range above 0.03 ml/stroke based on the ultrasound measuring principle. The flow meter achieves maximum chemical resistance as all wetted parts are made of PVDF and PTFE.

- Measures pulsating volumetric flows in the range of 0.03 – 10 ml/stroke

Find the right pump type in four steps

- Specify pump capacity in litres per hour [l/h]
- Specify back pressure in bar
- Find the intersection of these two values and
- select the pump type that lies nearest to it

Pump Guide

The choice of pumps is huge: 80 industries, 100,000 products and infinite applications. To make it easy to find your ideal metering pump, ProMinent designed the Pump Guide. In just a few clicks you will find a selection of suitable models.
www.pump-guide.com.
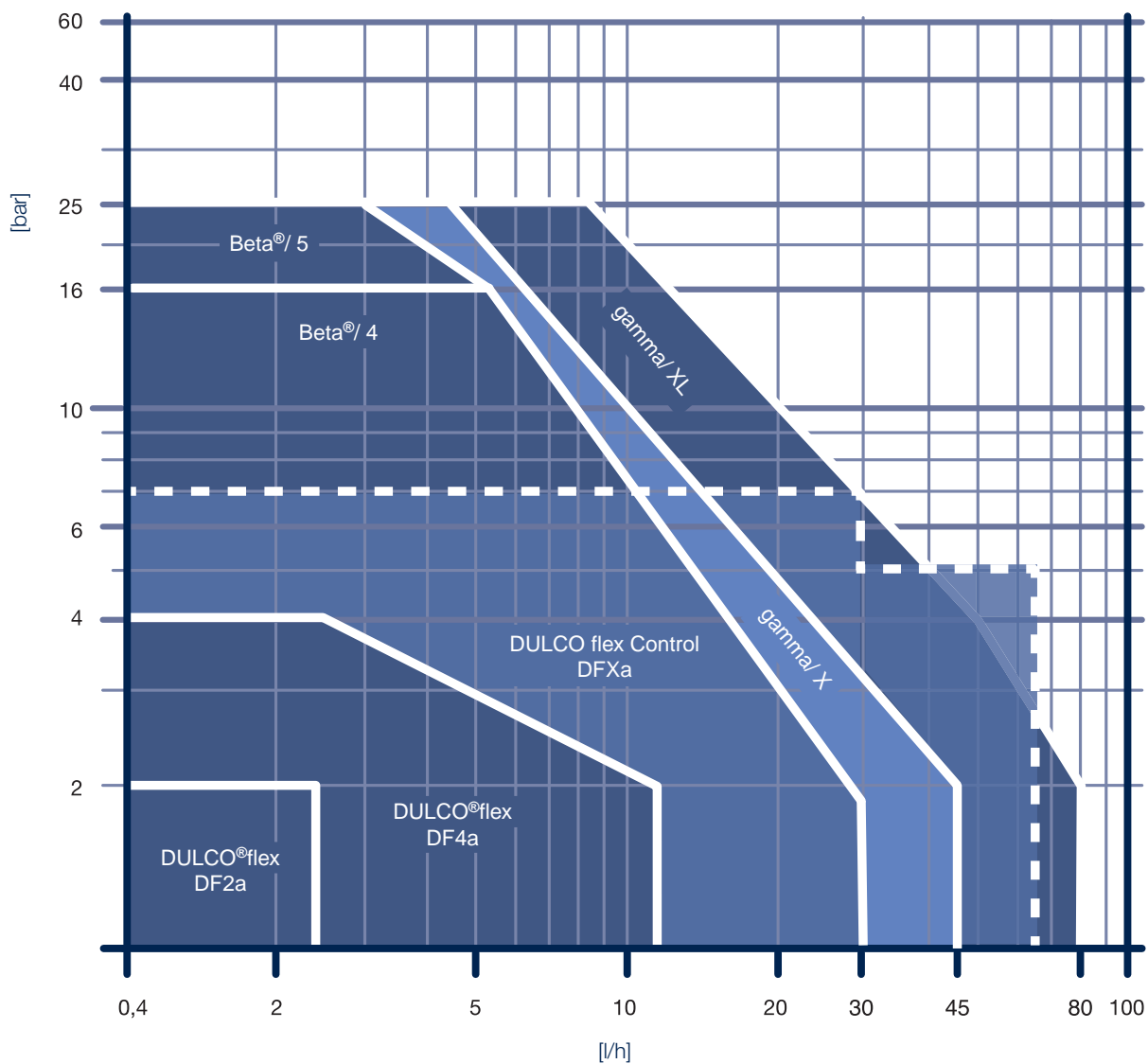
Overview of peristaltic metering pumps

Peristaltic metering pumps DULCO flex Control

Peristaltic metering pumps are used in a capacity range of between 10 ml/h and 410 l/h. They pump against a pressure of up to 8 bar. The incredible durability and wide-range of chemical compatibility of the high-performance hoses used by ProMinent are particularly impressive.

Peristaltic pump DULCO flex Control - DFXa

DULCO flex Control meters gaseous, viscous, abrasive or shear-sensitive media and sets new standards in metering. Linear and reproducible metering is guaranteed with this peristaltic pump under all process conditions. Hose replacement is a very simple process.

■ Capacity range: 6ml/h to 65 l/h at up to 7 bar

Peristaltic metering pump DULCO flex Control - DFYa

The new metering pump DFYa, the big brother of the DFXa, adds an intelligent peristaltic pump to the top capacity range of the ProMinent portfolio. The feed chemical is pumped by clamping the hose.
The valveless peristaltic pump DULCO flex Control - DFYa guarantees precise, linear and reproducible metering in all process conditions. It meters gaseous, viscose, shear-sensitive media, possibly containing particles, with ease – ProMinent is therefore setting new standards in metering with peristaltic pumps.

■ Capacity range: 5.1 l/h to 410 l/h at 8 bar

Overview of motor-driven metering pumps for all capacity ranges

Motor-driven metering pumps need to be robust, reliable and able to run on their own without supervision. Metering pumps with mechanically actuated diaphragms can be used almost universally in low pressure ranges. And what about servicing? Minimal. Precision? Uncompromising. Value for money? The best.

Motor-driven metering pump Vario C

The motor-driven metering pump Vario C delivers a high level of process quality for continuous metering within simple metering tasks. It can be used, for example, in the metering of additives or flocculants in chemical metering.

- Capacity range 8 – 76 l/h, 10 – 4 bar

Motor-driven metering pump Sigma/ 1 (Basic type)

The Sigma/ 1 Basic is an extremely robust motor-driven metering pump with patented multi-layer safety diaphragm for excellent process reliability. It offers a wide range of power end designs, such as three-phase or 1-phase AC motors, and is also suitable for use in areas at risk from explosion.

- Capacity range 17 – 144 l/h, 12 – 4 bar

Motor-driven metering pump Sigma/ 2 (Basic type)

Robust motor-driven metering pumps like the Sigma/ 2 Basic guarantee excellent process reliability with their patented multi-layer safety diaphragm. The diaphragm metering pump offers a number of power end versions and is also suitable for use in areas at risk from explosion.

- Capacity range 50 – 420 l/h, 16 – 4 bar

Motor-driven metering pump Sigma/ 3 (Basic type)

The patented multi-layer safety diaphragm for excellent process reliability is just one feature of the extremely robust motor-driven metering pump Sigma/ 3 Basic. It also offers a wide range of power end versions, such as three-phase or 1-phase AC motors, and is also suitable for use in areas at risk from explosion.

- Capacity range 146 – 1,030 l/h, 12 to 4 bar

The new Sigma X family – reliable, smart and with scope for networking

DULCOnneX

Motor-driven metering pump Sigma X
Control type Sigma/ 1

The Sigma control type is a smart, flexible motor-driven metering pump that sets new standards in terms of productivity, reliability and safety.

- Capacity range: 21 – 117 l/h, 12 – 4 bar

DULCOnneX

Motor-driven metering pump Sigma X
Control type Sigma/ 2

The Sigma control type is a smart, flexible motor-driven metering pump that sets new standards in terms of productivity, reliability and safety.

- Capacity range: 61 – 353 l/h, 16 – 4 bar

DULCOnneX

Motor-driven metering pump Sigma X
Control type Sigma/ 3

The Sigma control type is a smart, flexible motor-driven metering pump that sets new standards in terms of productivity, reliability and safety.

- Capacity range: 182 – 1,040 l/h, 12 – 4 bar

Find the right pump type in four steps

- Specify pump capacity in litres per hour [l/h]
- Specify back pressure in bar
- Find the intersection of these two values and
- select the pump type that lies nearest to it

Pump Guide

The choice of pumps is huge: 80 industries, 100,000 products and infinite applications. To make it easy to find your ideal metering pump, ProMinent designed the Pump Guide. In just a few clicks you will find a selection of suitable models.
www.pump-guide.com.

Pressure [bar]

Feed rate [l/h]

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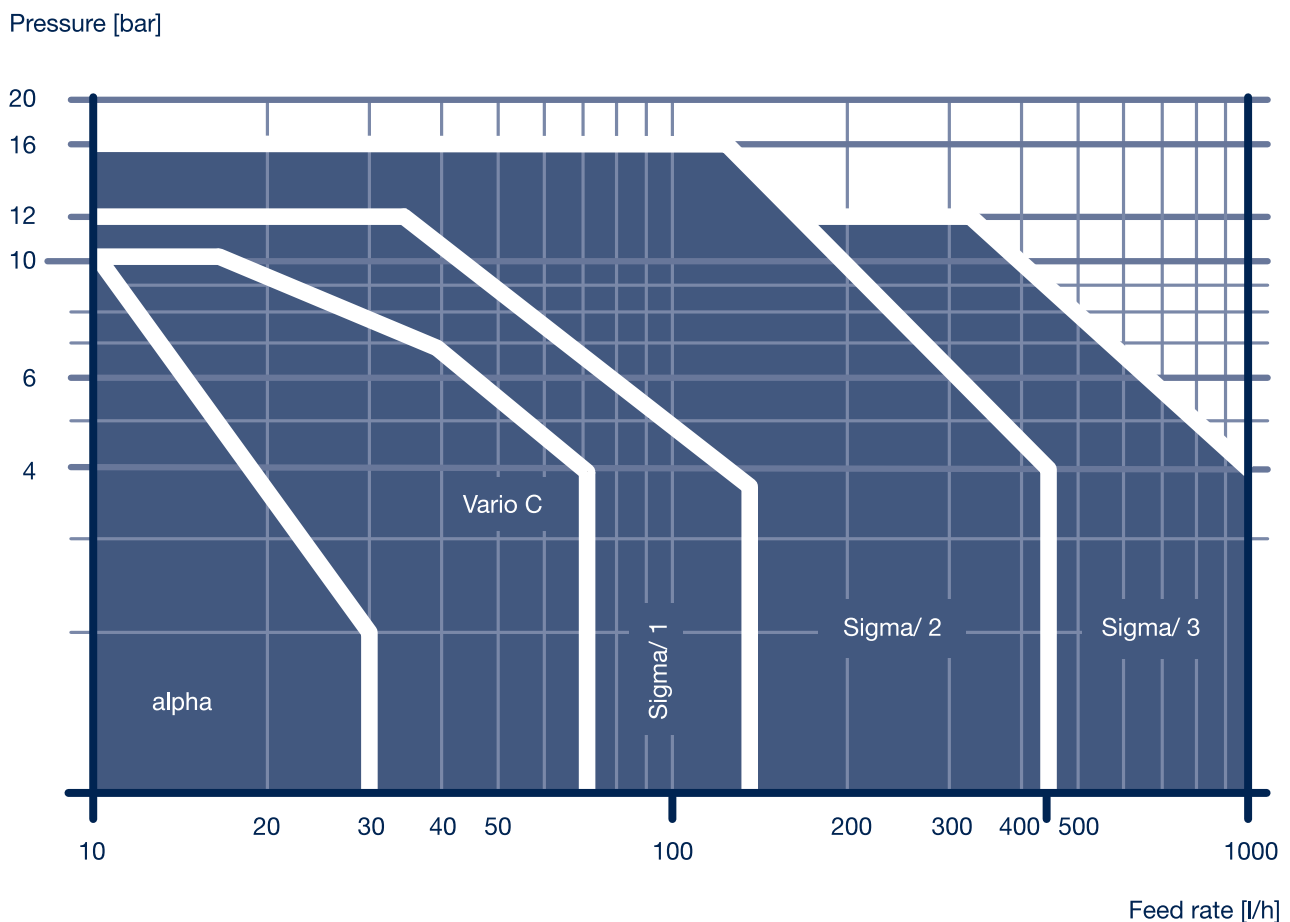
Overview of process metering pumps
for all capacity ranges

There is no room for compromise in high-end applications in the petrochemical and oil and gas industries. Risks associated with the metering of toxic, corrosive and flammable liquids must be fully eliminated. Reliable metering pumps need to be able to withstand very high pressure levels and extreme temperatures. What could be a more obvious solution for very challenging applications than ProMinent cutting-edge technology?

Hydraulic diaphragm metering pump Evolution mikro

The Evolution mikro is an innovative micro-metering pump for high pressures. The hydraulic diaphragm metering pump is the first of its kind with an electronically regulated linear direct power end. The power end has few mechanical functional elements and thus operates with virtually minimal maintenance.

- Capacity range: 0.02 – 18 l/h, 400 – 16 bar

Hydraulic diaphragm metering pump Hydro/ 2, Hydro/ 3, Hydro/ 4 API 675

As the latest member of the Hydro product range, these hydraulic diaphragm metering pumps meet the requirements of API 675. They stand out on account of their full-motion drive and automatic bleeding. There are a variety of power end options, including some for use in areas at risk from explosion.

- Capacity range: Hydro/ 2   13 – 91 l/h, 100 – 10 bar
  Hydro/ 3   11 – 201 l/h, 100 – 10 bar
  Hydro/ 4   242 – 1506 l/h, 40 – 7 bar

Hydraulic diaphragm metering pump Hydro/ 2 and Hydro/ 3

As extremely robust hydraulic diaphragm metering pumps, the Hydro/ 2 and Hydro/ 3 meet the most exacting safety requirements. Their modular construction offers extremely good flexibility in terms of application, for example in the oil and gas industry.

- Capacity range: Hydro/ 2   3 – 72 l/h, 100 – 25 bar
  Hydro/ 3   10 – 180 l/h, 100 – 25 bar

Hydraulic diaphragm metering pump Hydro/ 4

The Hydro/ 4 is an extremely robust hydraulic diaphragm metering pump, which meets the most exacting safety requirements – it comes with a pressure relief valve and PTFE multi-layer diaphragm with diaphragm rupture warning system as standard. Its modular construction makes it extremely versatile.

- Capacity range: 76 – 1,450 l/h, 40 – 7 bar

Hydraulic diaphragm metering pump Orlita® Evolution with stainless steel liquid end

Orlita® Evolution hydraulic diaphragm metering pumps EF1a, EF2a, EF3a and EF4a form an integrated product range with stroke lengths of 16 to 40 mm. This covers the capacity range from 3 to 7,400 l/h at 400 – 12 bar. A wide range of power end versions is available, including some for use in Zone 1 or Zone 2 areas at risk from explosion with ATEX certification. The Orlita® Evolution product range is designed to comply with API 675.

- Capacity range:
Size 1	3 – 540 l/h, 400 – 9 bar
Size 2	6 – 960 l/h, 400 – 12 bar
Size 3	24 – 2,577 l/h, 397 – 6 bar
Size 4	66 – 7,400 l/h, 400 – 12 bar

Hydraulic diaphragm metering pump Orlita® Evolution 1-4 with PVDF/PVC liquid end

The hydraulic diaphragm pump Orlita® Evolution is also available in a "plastic dosing head" version. The wetted materials PVC and PVDF display chemical resistance to many media, allowing this process-reliable pump to be used even more flexibly in an even greater number of applications.

- Capacity range:
Size 1	3 – 540 l/h, 21 – 8 bar
Size 2	6 – 540 l/h, 21 – 6 bar
Size 3	320 – 2,300 l/h, 16 – 12 bar
Size 4	670 – 7,400 l/h, 10 bar

Plunger metering pump Orlita® Evolution

The Orlita® Evolution plunger metering pumps EP1a and EP2a form an integrated product range with stroke lengths of 16 to 40 mm. This covers the capacity range from 3 to 7,400 l/h at 400 – 12 bar. A wide range of power end versions is available, including some for use in Zone 1 or Zone 2 areas at risk from explosion with ATEX certification. The Orlita® Evolution product range is designed to comply with API 675.

- Capacity range:
Size 1	5 – 540 l/h, 330 – 9 bar
Size 2	5 – 540 l/h, 520 – 22 bar

Hydraulic diaphragm metering pump Orlita® Evolution API 674

Orlita® Evolution hydraulic diaphragm metering pumps EF1a, EF2a, EF3a and EF4a form an integrated product range with stroke lengths of 16 to 40 mm. This covers the capacity range from 3 to 7,400 l/h at 400 – 12 bar. A wide range of power end versions is available, including some for use in Zone 1 or Zone 2 areas at risk from explosion with ATEX certification. The Orlita® Evolution product range is designed to comply with API 674.

- Capacity range:
Size 1	3 – 540 l/h, 400 – 9 bar
Size 2	6 – 960 l/h, 400 – 12 bar
Size 3	24 – 2,577 l/h, 397 – 6 bar
Size 4	66 – 7,400 l/h, 400 – 12 bar
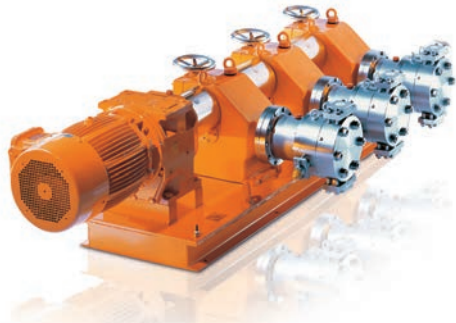
Hydraulic diaphragm metering pump Orlita® MF

The hydraulic diaphragm metering pump Orlita® MF offers reliable capacities even under high pressure and has a modular construction, making it highly versatile. Thanks to its modular design, this pump is tailored to meet your requirements even at very high pump capacities.

- Capacity range: 0 – 13,000 l/h, 700 – 6 bar

Hydraulic diaphragm metering pump Orlita® MH

The diaphragm metering pump Orlita® MH has a robust metal diaphragm. This permits precise pump capacities even at very high pressure. The Orlita® MH has a modular construction and is therefore very flexible. For example, a range of power end versions is available and drives, power ends and dosing heads can be freely combined.

- Capacity range: up to 800 l/h, up to 700 bar
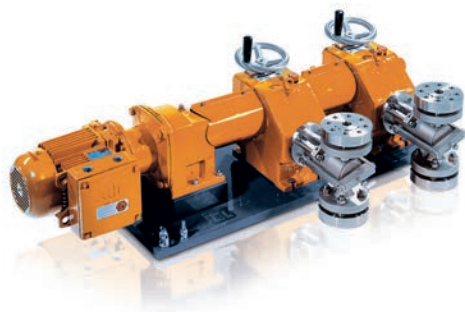
Plunger metering pump Orlita® PS

The high-performance plunger metering pump Orlita® PS enables precise pump capacities even at maximum pressure and temperatures of up to +400 °C. The Orlita® PS pump has a modular construction and is therefore very flexible.

- Capacity range: 0 – 42,000 l/h, 400 – 4 bar

Plunger metering pump Orlita® DR

The plunger metering pump Orlita® DR does not need valves and can therefore be operated within a broad stroke rate range. This makes it suitable for use with high-viscosity and extremely high-viscosity media of up to 106 mPas within a wide temperature range from -40 °C to 400 °C, for example in the food industry.

- Capacity range: 0 – 4,000 l/h, 400 – 4 bar

Diaphragm pumps and plunger metering pumps Makro TZ

This range of metering pumps has a modular design and offers an application-matched solution for every use.

- Capacity range of TZMb (mech. deflected diaphragm pump): 260 – 2,100 l/h, 12 – 4 bar
  Capacity range of TZKa (plunger metering pump): 8 – 1,141 l/h, 320 – 11 bar

Diaphragm pumps, hydraulic diaphragm pumps and plunger metering pumps Makro/ 5

Makro/ 5 can also be expanded one module at a time and is another product range available as a diaphragm pump, hydraulic diaphragm pump or plunger metering pump, which is used for higher capacity ranges.

- Capacity range of M5Ma (mech. deflected diaphragm pump): 1,540 – 4,000 l/h, 4 bar
- Capacity range of M5Ha (hydr. deflected diaphragm pump): 450 – 6,108 l/h, 25 – 6 bar
- Capacity range of M5Ka (plunger metering pump): 38 – 6,014 l/h, 320 – 6 bar
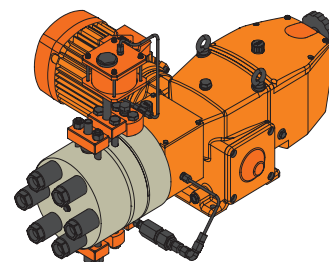
Hydraulic metal diaphragm metering pump Orlita® MHHP

The metal diaphragm metering pumps Orlita® MHHP are special pumps, which provide precise pump capacities even at maximum pressures of up to 3,000 bar.

- Capacity range: 3 – 11 l/h, 3,000 bar

Find the right pump type in four steps

- Specify pump capacity in litres per hour [l/h]
- Specify back pressure in bar
- Find the intersection of these two values and
- select the pump type that lies nearest to it

Pump Guide

The choice of pumps is huge: 80 industries, 100,000 products and infinite applications. To make it easy to find your ideal metering pump, ProMinent designed the Pump Guide. In just a few clicks you will find a selection of suitable models.
www.pump-guide.com

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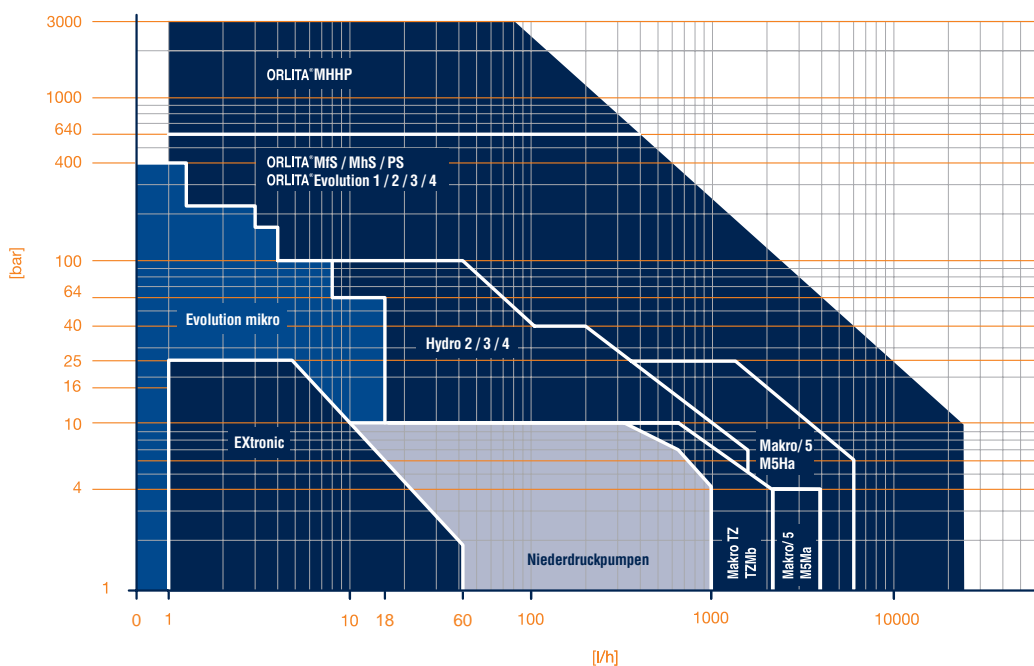
Overview of storage tanks and chemical transfer pumps

Storage tanks

ProMinent also offers standard tanks for chemical storage and transfer. However, if you have specific requirements ProMinent can also supply tanks customised to a wide range of specifications. The perfect addition: chemical transfer pumps and peristaltic pumps, which can be used for metering tasks in many applications with virtually any conceivable pump capacity.

Dosing tanks and collecting pans

PE storage tanks produced in a rotation process. Can be supplemented by ProMinent metering pumps, suction lances and stirrers. The stackable PE collecting pans are available in matching sizes.

- Useful capacity of 35 – 1,500 l

Chemical transfer pumps

ProMinent chemical transfer pumps are used to pump liquids from container A to container B. Different media have very different chemical properties, so the pumps need different functional principles. ProMinent engineers work hard to make sure that liquid and pump are fully compatible. They approach every single application with the same ProMinent standards of maximum diligence and quality.

Eccentric screw pump Spectra

The eccentric screw pump Spectra meters liquid polyelectrolytes in concentrated and dilute form. It can be used, for example, in waste water treatment or sludge dewatering.

■ Capacity range: 2.4 – 12,000 l/h, 12 – 3 bar

Centrifugal pump von Taine®

The solenoid-coupled centrifugal pump von Taine® for pumping liquid media works safely and reliably: liquid media are pumped leak-free.

■ Capacity range: up to 22,500 l/h, delivery height up to 23.5 mWs

Air-operated diaphragm pump Duodos

Air-operated diaphragm pump Duodos for pumping liquid media.

■ Capacity range up to 12,000 l/h, delivery height up to 70 mWs

Barrel pump DULCO®Trans

The field of application of the DULCO®Trans depends on the chemical resistance of the materials used.

■ Pump capacity according to size 900, 2,800 or 3,750 l/h

Rotary lobe pump ROTADOS

The compact rotary lobe pump pumps viscous and even abrasive media at up to 100 m³/h. It even provides a reversible pumping direction thanks to its valveless construction. Housing, plunger and seals are available in different materials to match the medium.

- Capacity range: 25 – 100 m³/h, 10 – 4 bar

Selection guide

ProMinent makes it easy to choose the right chemical transfer pump. Choose the pump capacity and desired pressure. If your specific requirement is not shown here, please contact us.

Type	Priming	Power end	Capacity range
Eccentric screw pump Spectra	Self-priming	Electrical	up to 12,000 l/h
Centrifugal pump von Taine®	Normal priming (Feed necessary)	Electrical	up to 22,500 l/h
Air-operated diaphragm pump Duodos	Self-priming	Compressed air	up to 6,700 l/h
Barrel pump DULCO®Trans	Self-priming	Electrical	up to 4,800 l/h
Rotary lobe pump ROTADOS	Self-priming	Electrical	up to 100 m³/h

Overview of peristaltic pumps

Peristaltic pumps DULCO®flex are amongst ProMinent's most adaptable pumps. They are suitable for a very wide pump capacity range. The smaller pumps of types DF2 to DF4 have been specially designed for metering tasks in swimming pools, hot tubs or spa and wellness zones. The large peristaltic pumps DFBa, DFCa and DFDa are ideal for specific tasks using maximum pump capacities and pressures in the laboratory and in industry. All models are based on a simple operating principle and are extremely safe and easy to use.

Peristaltic pump DULCO®flex DF2a

The peristaltic pump DULCO®flex DF2a meters chemicals functionally, cost-effectively and quietly – ideal for use in swimming pools, hot tubs and in spa and wellness facilities.

- Capacity range: 0.4 – 2.4 l/h, 1.5 bar

Peristaltic pump DULCO®flex DF4a

The peristaltic pump DULCO®flex DF4a for metering flocculants and active carbon treats water precisely and accurately. It is ideal for use in swimming pools, hot tubs or spa and wellness facilities. An operating pressure up to 4 bar is possible.

- Capacity range: 0.35 – 12 l/h, 4 – 2 bar

Peristaltic pump DULCO®flex DFBa

The peristaltic pump DULCO®flex DFBa (designed as a low-pressure pump) is suitable for metering the smallest volumes in laboratories.

- Capacity range: up to 649 l/h at 8 bar

Peristaltic pump DULCO®flex DFDa

The peristaltic pump DULCO®flex DFDa is designed for maximum pump capacities and high pressures and wins customers over with its very smooth nature and long service life. It is fitted with shoes and fabric-reinforced hoses – perfect for industrial use.

- Capacity range: up to 15,000 l/h at 15 bar
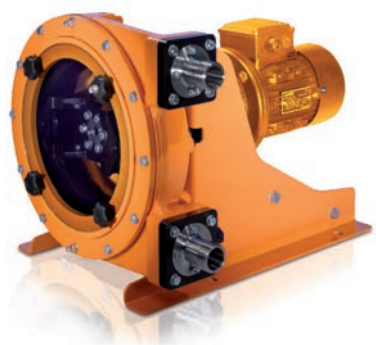
Peristaltic pump DULCO®flex DFCa

High pump capacities are not a problem with the peristaltic pump DULCO®flex DFCa. It is also equipped with rollers and fabric-reinforced hoses for industrial use.

- Capacity range: up to 8,900 l/h at 8 bar

Overview of metering systems DULCODOS®

Metering systems DULCODOS®

The standard metering systems DULCODOS® are the result of years of application-based development at ProMinent. After all, you don't have to reinvent the wheel every time. With ProMinent you can reduce your costs by choosing carefully designed complete solutions.

Metering system DULCODOS® universal mini PP
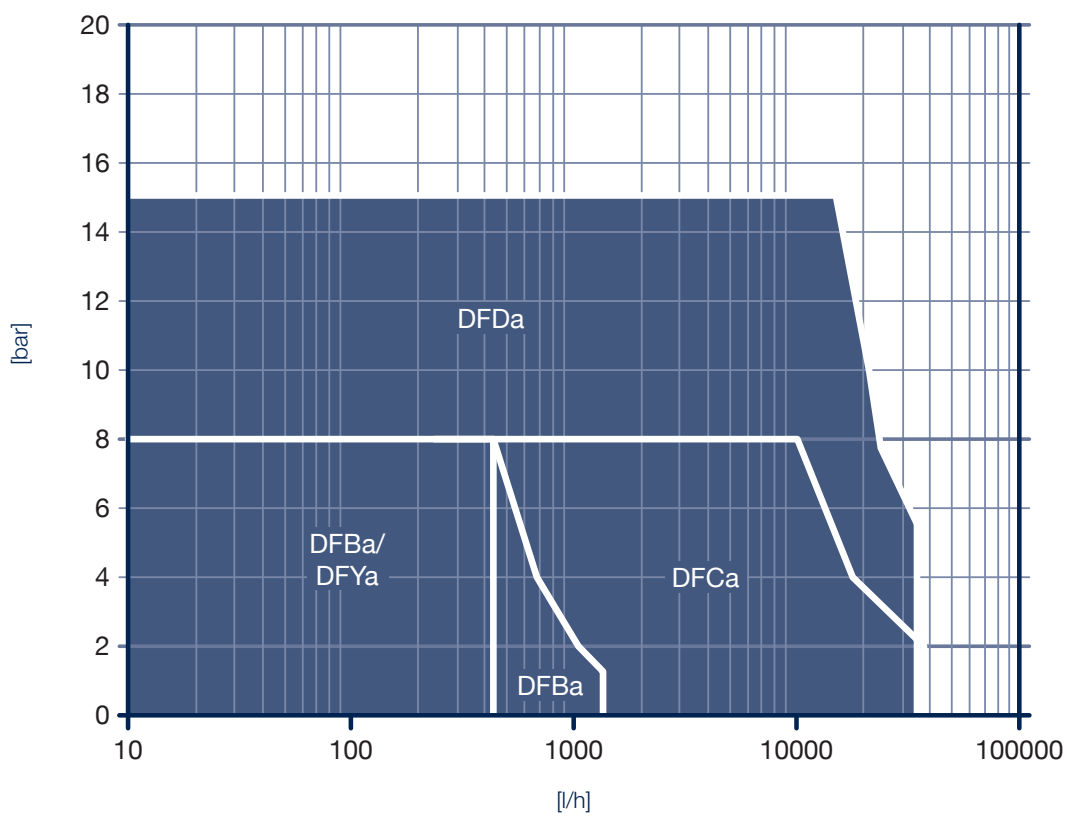
The metering system DULCODOS® universal mini (PP) combines reliable standard components, tailored precisely to your needs, in the most compact space.

- Up to 75 l/h (10 – 2 bar) pump volume depending on the pump selected (max. 2 pumps)

Metering system DULCODOS® universal mini PE

The compact metering system DULCODOS® universal mini (PE) is available with a solenoid-driven metering pump of the Beta® 4 or 5, gamma/ X product ranges. It is also easy to operate. The system is cost-effective and can be delivered extremely quickly.

- Up to 45 l/h (10 – 2 bar) pump volume depending on the pump selected (max. 1 pump)

Metering system DULCODOS® modular, DSKa

The ready-wired modular metering system DULCODOS® modular is used for the ultra-precise metering of chemicals. It is modular in design and can be flexibly used in a wide range of applications.

- Capacity: 40 – 1,000 l/h

Metering system DULCODOS® Emergency potable water disinfection

Handy metering system for emergency potable water disinfection. For fast use in combating micro-organisms.

- Metering volumes: 0.02 – 1.55 l/h, 10 bar

Metering system DULCODOS® Ammonia

Metering system DULCODOS® Ammonia for the low-odour and safe handling of ammonia solution. For a stable pH value and reduced corrosion in the vapour system.

Metering system DULCODOS® Hydrazin

The hydrazine batching and metering system DULCODOS® is used for manual batching and automatic metering of diluted hydrazine solutions. And, of course, it complies with all environmental and safety requirements.

- Dosing tanks hold 130 and 250 litres

Intelligent metering:
measuring, control and sensor technology

Precision in detail

Measuring and control technology needs to deliver high performance. That includes precise sensor systems. In this way, liquid media can be metered with absolute precision. ProMinent experts are passionate about industrial process engineering. They use a combination of ongoing research and their full expertise to develop pioneering innovations. If we set new standards in quality and reliability along the way, then so much the better.

Strong together

When all the components work together, everything runs smoothly. The metering pump, controller and sensor are designed to work optimally together, forming an integral control circuit for fault-free operation with maximum safety. This increases the quality of your products, saves energy and conserves resources.

Overview of sensor technology

On the one hand, our online sensors from the DULCOTEST® product range bridge the gap when setting up the closed control circuit for precisely metering chemicals. On the other hand, however, they are also ideal for reliably monitoring substances in water and limit values. The wide range of application-specific sensors allows a perfect solution to be found for the measuring task in hand - and does so for a whole host of measurement parameters. The sensors can be flexibly installed at the process interfaces using bypass, in-built or immersion fittings. The measured values are delivered in real time and can also be transferred to superordinate control systems using the large range of communication ports provided by our controllers. These measured values are delivered in real time and can be flexibly connected to the various process interfaces via bypass, immersion or in-built fittings.

Potentiometric sensors DULCOTEST®

From simple applications in water treatment through to industrial process applications under critical conditions, DULCOTEST® pH and ORP sensors fulfil all measurement tasks.

The selection guide for pH and ORP potentiometric sensors starts with the properties of the medium to be measured and the pertinent process conditions and delivers the optimum sensor type for the particular application.

Selection guide for DULCOTEST® pH sensors

Medium	Temperature / pressure	Sensor type	Typical application
Clear, pH 3 - 14	max. 100 °C/3 bar	PHEP-H	Chemical processes
	max. 25 °C / 6 bar		
Clear, pH 2 - 12	max. 80 °C / no overpressure	PHEN	Chemically contaminated water, low-conductivity water ≥ 50 μS/cm
	max. 60 °C / 3 bar	PHES	Swimming pool water, potable water, glass stem
		PHEK	Swimming pools, aquaria, synthetic stem
	max. 80 °C / 6 bar	PHEP/PHEPT	Process water
	max. 80 °C / 8 bar	PHED	Chemically contaminated water, e.g. Cr^{6+}, CN^-
Solid matter, turbid, pH 2 - 12	max. 80 °C / 8 bar	PHER-DJ	Chemically contaminated waste water, e.g. Cr6+, CN–
Solid matter, turbid	max. 80 °C / 6 bar	PHER/PHEI	Cooling water, waste water
Solid matter, non-translucent	max. 100 °C/16 bar	PHEX	Suspensions, sludge, emulsions
Clear to turbid, containing fluoride, pH 0-7	max. 50 °C / 7 bar	PHEF	Exhaust air scrubbers, semiconductor industry, electroplating

Selection guide for DULCOTEST® ORP sensors

Medium	Temperature / pressure	Sensor type	Typical application
Clear	max. 80 °C / no overpressure	RHEN	Chemically contaminated water, low-conductivity water ≥ 50 µS/cm
	max. 60 °C / 3 bar	RHES	Swimming pool water, potable water, glass stem
		RHEK	Swimming pools, aquaria, synthetic stem
	max. 80 °C / 6 bar	RHEP-Pt	Process water
		PHEP-Au	Chemically contaminated water, e.g. CN⁻ ozone treatment
Solid matter, turbid, pH 2 - 12	max. 80 °C/6 bar	RHER-DJ	Chemically contaminated waste water, e.g. Cr6+, CN–
Solid matter, turbid	max. 80 °C / 16 bar	RHER/RHEIC	Cooling water, waste water
Solid matter, non-translucent	max. 100 °C/6 bar	RHEX	Suspensions, sludge, emulsions

DULCOTEST® sensors with CAN bus communication

The innovative sensor series with CAN bus compatibility enables data storage and bidirectional communication with the measuring and control instrument.

Amperometric DULCOTEST® sensors

The amperometric sensors in the DULCOTEST® range deliver selective and precise measured values in real time for a very wide range of disinfectants.

Selection guide for amperometric sensors

NEW

Measured variable	Applications	Graduated measuring ranges	Connection to DULCOMETER®	Sensor type
Free chlorine	Potable water, swimming pool water	0.01 – 100 mg/l	D1C, DAC	CLE 3-mA-xppm, CLE 3.1-mA-xppm
Free chlorine	Process and waste water	10 – 200 mg/l	D1C, DAC	CLR 1-mA
Free chlorine	Potable water, swimming pool water	0.01 – 10 mg/l	DULCOMARIN®	CLE 3-CAN-P-xppm, CLE 3.1-CAN-P-xppm
Free chlorine	Potable water, swimming pool water, in-situ electrolysis (without diaphragm)	0.02 – 10 mg/l	D1C, DAC, AEGIS II	CLO 1-mA-xppm
Free chlorine	Swimming pool water, uncontaminated potable water and process water; can also be used together with diaphragm-free electrolysis processes	0.01 – 10 mg/l	DULCOMARIN®	CLO 1-CAN-P-10ppm
Free chlorine	Hot water up to 70 °C (legionella), in-situ electrolysis (without diaphragm)	0.02 – 2 mg/l	D1C, DAC, AEGIS II	CLO 2-mA-2ppm
Free chlorine	Potable water, swimming pool water	0.01 – 50 mg/l	DMT	CLE 3-DMT-xppm
Free chlorine	Potable water, swimming pool water	0.05 – 5 mg/l	COMPACT	CLB 2-µA-xppm
Free chlorine	Potable water, swimming pool water	0.05 – 5 mg/l	COMPACT	CLB 3-µA-xppm
Free chlorine	Cooling water, process water, waste water, water with higher pH values (stable); seawater (free chlorine exists as bromine)	0.01 – 10 mg/l	D1C, DAC, AEGIS II	CBR 1-mA-xppm
Total available chlorine / free chlorine	Swimming pool water with organic chlorine disinfectants and in-situ electrolysis (without diaphragm)	0.02 – 10 mg/l	D1C, DAC, AEGIS II	CGE 3-mA-xppm
Total available chlorine / free chlorine	Swimming pool water with organic chlorine disinfectants and in-situ electrolysis (without diaphragm)	0.01 – 10 mg/l	DULCOMARIN®	CGE 3-CAN-P-xppm
Total chlorine	Potable water, industrial water, process water and waste water	0.01 – 10 mg/l	D1C, DAC, AEGIS II	CTE 1-mA-xppm
Total chlorine	Potable water, industrial water, process water and waste water	0.01 – 10 mg/l	DMT	CTE 1-DMT-xppm
Total chlorine	Potable water, industrial water, process water and waste water	0.01 – 10 mg/l	DULCOMARIN®	CTE 1-CAN-P-xppm
Combined chlorine	Swimming pool water	0.02 – 2 mg/l	DAC	CTE 1-mA-2 ppm and CLE 3.1-mA-2 ppm
Combined chlorine	Swimming pool water	0.01 – 10 mg/l	DULCOMARIN®	CTE 1-CAN-P-xppm and CLE 3.1-CAN-xppm
Total available bromine	Cooling water, waste water, swimming pool, spa pool water, bromine with BCDMH	0.01 – 10 mg/l	D1C, DAC	BCR 1-mA-xppm (replaces earlier type BRE 1)
Total available bromine	Cooling water, swimming pool water, spa pool water with organic or inorganic bromine compounds	0.02 – 10 mg/l	DULCOMARIN®	BRE 3-CAN-10ppm
Free and combined bromine	Cooling water, process water, waste water, water with higher pH values (stable); seawater	0.02 – 20 mg/l	D1C, DAC, AEGIS II	CBR 1-mA-xppm
Free and combined bromine	Cooling water, process water, waste water, water with higher pH values (stable); seawater	0.02 – 20 mg/l	DULCOMARIN®	CBR 1-CAN-P-10 ppm
Chlorine dioxide	Potable water	0.01 – 10 mg/l	D1C, DAC	CDE 2-xppm
Chlorine dioxide	Bottle washing system	0.02 – 2 mg/l	D1C, DAC	CDP 1
Chlorine dioxide	Hot water up to 60 °C, cooling water, waste water, irrigation water	0.01 – 10 mg/l	D1C, DAC, DULCOMARIN®	CDR 1-xppm, CDR 1-CAN-xppm
Chlorite	Potable water, washing water	0.02 – 2 mg/l	D1C, DAC, DULCOMARIN®	CLT 1-mA-xppm, CLT 1-CAN-xppm
Ozone	Potable water, swimming pool water	0.02 – 2 mg/l	D1C, DAC	OZE 3-mA-2 ppm
Ozone	Process water, industrial water, cooling water	0.02 – 2 mg/l	D1C, DAC	OZR 1-mA-2 ppm
Dissolved oxygen	Aeration tanks, clarification plants, fish farming, potable water, surface water	0.1 – 20 mg/l	D1C, DAC	DO 3-mA-xppm
Dissolved oxygen	Aeration tanks, clarification plants	0.05 – 10 mg/l	D1C, DAC	DO 2-mA-xppm
Peracetic acid	CIP (cleaning in place), aseptic foodstuff filling	1 – 2,000 mg/l	D1C, DAC, AEGIS II	PAA 1-mA-xppm
Hydrogen peroxide	Clear water, fast control	1 – 2,000 mg/l	DAC	Perox sensor, PEROX-H2.10 P
Hydrogen peroxide	Process water, swimming pool water	0.5 – 2,000 mg/l	D1C, DAC	PER1-mA-xppm

Sensors DULCOTEST® for electrolytic conductivity

Conductivity sensors for optimum process integration: DUL-COTEST® sensors meet a wide range of measuring requirements and allow the best solution to any given measuring task to be achieved.

- Graduated measuring ranges 0.01 µS/cm – 2,000 mS/cm

DULCOTEST® turbidity sensors

Turbidity measurements with DULCOTEST® DULCO® turb C: Compact measuring instrument that uses light scatter to measure turbidity, with a large measuring range and different designs to comply with ISO and EPA standards. Available with or without automatic cleaning.

- Measuring range 0 - 1,000 NTU

Selection guide for DULCOTEST® conductivity sensors

Conductivity > 20 mS/cm and/or film-forming medium and/or chemically aggressive medium			
yes			no
Inductive conductivity measurement			Conductive conductivity measurement
Compact controller can be used in the application?			Further selection according to summary table:
yes	no		■ Measuring range ■ Material (chemical compatibility) ■ Temperature ■ Hydraulic process connection ■ Electrical connection ■ Compatibility of measuring and control units
Do the following conditions exist? Aggressive chemicals, with the exception of lyes and/or temperatures > 80 °C and/or measured value < 200 µS/cm	**Type ICT 8** for installation in pipes with adaptor accessory, for immersion with insertion fitting accessory		
yes	no		Product ranges LF, LMP, CK, CCT
Series ICT 2 Installation in pipes with stainless steel flange accessory For immersion with accessory: immersion fitting IMA - ICT 2	**Type ICT5** for installation in pipes **Type ICT 5-IMA** for immersion		

Overview of measuring and control technology

Measuring and control instruments from ProMinent are adapted to the relevant application. They are available in different performance classes and can be integrated in every process environment.

Transmitter DULCOMETER® DMTa

The transmitter DULCOMETER® DMTa converts the sensor signals from pH, ORP value, chlorine concentration and conductivity into an interference-insensitive 4 – 20 mA analogue signal. Flexible, safe and always the optimum resolution of measured value.

Controller DULCOMETER® Compact

As a controller in water analysis, the DULCOMETER® Compact is the right controller for control tasks that require only one-way control.

Controller DULCOMETER® D1Cb/D1Cc

The controller DULCOMETER® D1Cb/D1Cc can be used for control tasks in potable water treatment, waste water treatment and many other areas. Safe, convenient and clear thanks to the large illuminated graphic display, plain text operating menu and pH sensor monitoring.

DULCOnneX

NEW

Controller DULCOMETER® diaLog DACb

The controller DULCOMETER® diaLog DACb is our compact all-rounder for water analysis. With its specially designed functionalities, e.g. processing of interference variables and switchover of control parameters, it closes the control circuit between DULCOTEST® sensors and ProMinent® metering pumps. Up to three measuring and control channels of the DULCOMETER® diaLog DACb can be individually configured to meet customer requirements. Everything that you need for the reliable treatment of industrial and process water, potable water or even swimming pool water.

Controller DULCOMARIN® 3

Tailored to the treatment of swimming pool water: the measuring and control system DULCOMARIN® 3 is your digital link to the technology of the future. It controls the entire range of swimming pools – from adventure pools to private pools. The system is operated using a large 7" touch display, via the online interface or a VNC viewer. A web cam can be connected to allow you to view your pool.

DULCOnneX

NEW

Controller AEGIS II

Especially for treating cooling water: controller AEGIS II continuously measures and controls the conductivity of cooling water from up to two evaporator cooling water circuits. The selective online measurement and control of biocides, pH and determination of the tendency of various metals to corrode enable adaptation to virtually all customer requirements. The controller is configured and visualised using Wi-Fi via a smartphone or laptop.

Controller SlimFLEX 5a

The cooling tower controller SlimFLEX 5 is the little brother of the AEGIS II. It continuously measures and regulates conductivity and controls the metering of biocides in a time-dependent manner. This keeps pipework and heat exchangers clean and prevents legionella outbreaks.

Selection guide

The selection guide for the measuring and control technology DULCOMETER® is divided into tables and applications to help you find the right solution for your application at a glance.

Function	DACb	Compact	D1Cb	D1Cc
Measured variables				
pH	■	■	■	■
ORP	■	■	■	■
Chlorine	■	■	■	■
Chlorine dioxide	■		■	■
Chlorite	■		■	■
Bromine	■		■	■
Conductivity conductive		■		
Conductivity inductive		■		
Conductivity via mA	■		■	■
Peracetic acid	■		■	■
Hydrogen peroxide	■		■	■
Ozone	■		■	■
Dissolved oxygen	■		■	■
Fluoride	■		■	■
0/4…20 mA standard signal general measured variables	■		■	■
Power supply				
90 – 253V ~	■	■	■	■
24 V DC	■			
Method of installation, degree of protection				
Wall mounted IP 65			■	
Control panel mounting IP 54, 1/4 DIN				■
Combination housing (wall mounting, control panel mounting, pillar assembly) IP 67, IP 54	■	■		
Measurement				
Number of measuring channels	1/2 optionally selectable	1	1	1
Sensor monitoring of pH	■	■	■	■
Temperature compensation for pH	■	■	■	■
Temperature compensation for conductivity	■	■		
pH compensation for chlorine	■			
Control				
PID controller	■	■	■	■
Monodirectional controller (e.g. with pH acid or alkali)	■	■		
Bidirectional controller (e.g. with pH acid or alkali)	■		■	■

Overview of panel-mounted measuring and control systems

Complete measuring and control modules for easy integration in water treatment processes.

Fully assembled online measuring units and online control units are suitable for the most important measured variables for potable water, food and beverage and waste water applications. Here ProMinent uses the panel-mounted systems of the DULCOTROL® product range. They can be configured with a simple, application-based ordering system. You can choose up to 3 measuring and control points, all available at the same time, from 13 different measuring parameters in a variety of combinations. The benefit: as a complete plug-and-play module, these systems are quickly and easily installed and immediately ready for use.

Measuring and control system DULCOTROL® Drinking Water / F&B

Monitoring and treatment of potable water and similar types of water with DULCOTROL® – the compact measuring and control system specially designed for the food and beverage industry.

Measuring and control system DULCOTROL® Waste Water

Monitoring and treatment of waste water with the panel-mounted online measuring and control system. All wetted components are designed for water polluted by chemicals and containing solids.

Measuring and control system for cooling water treatment

Monitoring and treatment of cooling water with DULCODOS ® Cooling Water– the compact measuring and control system specially designed for the treatment of cooling water in evaporation cooling systems and wet separators.

Measuring and control system DULCODOS ® Cooling Water

The compact measuring and control system for the reliable monitoring and treatment of cooling water in evaporation cooling systems. The DULCODOS® Cooling Water measuring and control systems with the AEGIS II controller are compact units for reliable monitoring
and treatment of cooling water and are available with various sensor configurations in accordance with the 42th Federal Immission Control Ordinance (BImSchV).

Metering systems for swimming pool water treatment

The standard metering systems DULCODOS® are the result of years of application-based development at ProMinent. After all, you don't have to reinvent the wheel every time. With ProMinent you can reduce your costs by choosing carefully designed complete solutions.

Metering system DULCODOS® Pool Soft

Chlorine-free measuring, control and metering system for environmentally operated private pools. Safe water disinfection with active oxygen as a turnkey complete solution.

■ For swimming pools with volumes up to 100 m³

Metering system DULCODOS® Pool Basic

The measuring, control and metering system for DULCODOS® Pool Basic is a complete solution for private swimming pools where the chlorine content is controlled using the low-maintenance measurement of the ORP.

■ For swimming pools with a circulation capacity of up to 200 m³/h

Metering system DULCODOS® Pool Comfort

The measuring, control and metering system for pH correction and liquid chlorine DULCODOS® Pool Comfort is the convenient solution for pH adjustment and disinfection of swimming pools with liquid chlorine products. Remote access is possible via LAN interface with two or three measured variables: pH/ORP, pH/chlorine or pH/ORP/chlorine.

■ For swimming pools with a circulation capacity of up to 225 m³/h

Metering system DULCODOS® Pool Professional

The measuring, control and metering system for pH correction and all kinds of chlorine according to DIN 19643 for individual adjustment and monitoring of all common hygiene-relevant parameters in public pools. DULCODOS® Pool Professional ensures crystal-clear water quality and lowers operating costs thanks to Eco!Mode.

■ For swimming pools with a circulation capacity of up to 350 m³/h

Water treatment and disinfection

Research and development in all standard technologies is very worthwhile because the products and systems used in the treatment of hygienically pure water are state-of-the-art.

From the huge range of available products, ProMinent experts put together the system that best supports your application. Our product offering extends from metering pumps for all capacity ranges through to measuring and control technology, membrane filtration systems and established disinfection processes. We deliver efficient, safe and high-performance complete solutions. And of course we also offer worldwide technical support.

Overview of UV systems

UV radiation is a safe, chemical-free and reliable method of disinfection in modern water treatment. Dulcodes UV systems from ProMinent utilise the safety and reliability of UV disinfection in a wide range of applications. Scientific research and countless systems successfully in operation prove that UV is ideally suited to water disinfection.

UV system Dulcodes A

The UV system works cleanly and with efficient use of energy, based on continuously variable medium pressure lamps, and can therefore automatically compensate for variations in the water quality or level of contamination.

- Flow up to 739 m^3/h

UV system Dulcodes MP

The UV system Dulcodes MP for the efficient decomposition of combined chlorine in swimming pools. The typical odour associated with swimming pools is eliminated and the eyes, nose and skin are no longer irritated. Apart from improving the water quality, the low investment costs and high fresh water and energy consumption savings result in short payback times.

- Flow up to 569 m^3/h

UV system Dulcodes LP

The unique UV systems Dulcodes LP are synonymous with pioneering water treatment – efficient and free of chemicals.

- Flow up to 523 m^3/h

UV systems Dulcodes LP-PE (Plastic)

Disinfect saline seawater or thermal water without corrosion problems with the UV system Dulcodes LP-PE Plastic. The UV system consists of a reactor and a UV sensor made of highly UV-resistant plastic.

- Flow up to 505 m^3/h

DULCOnneX

UV system Dulcodes LP certified

UV system Dulcodes LP for potable water disinfection, comprehensively certified to internationally-recognised DVGW / ÖNORM / SVGW / ACS / UVDGM standards. Pioneering water treatment – highly efficient using Vario-Flux lamps with dynamic lamp heating.

- Flow up to 410 m³/h

DULCOnneX

UV system Dulcodes LP F&B

UV system with hygienic design of the radiation chamber. For reliable disinfection and constant quality in your production process.

- Flow up to 189 m³/h

	Typ LP not certified	Typ LP certified	Typ LP F&B	Typ LP Plastic chamber	Typ MP Conventional ballast technology	Typ A Electronic ballast technology
Output [m³/h] 400 J/m², 98%/cm Transmission	1.000 500 200 100 50 20 10 5 2					
Application						
Drinking water	■	■				■
Industrial water	■	■		■	■	■
Swimming pool water	■			■	■	■
Salt water				■		
Food and beverages industry			■			

Performance overview of UV systems

Which type is best for you? This overview shows the performance and typical applications of ProMinent UV standard systems. Need more details? Don't hesitate to contact us. We're here to help!

Overview of ozone systems

ProMinent ozone systems are normally used for the treatment of potable water, swimming pool water, water in the food and beverage industry, aquarium and pool water in zoos, and cooling and process water.

Ozone system OZONFILT® OZVb

OZONFILT® OZVb is powerful and compact and is ideal for efficient ozone generation from compressed air in the output range of up to 70 g/h. The turnkey ozone system, including mixing unit, delivers everything you need for safe and smooth operation.

- Ozone capacity 10 – 70 g ozone/h

Ozone system OZONFILT® OZMa

OZONFILT® OZMa is synonymous with maximum operational safety and minimal operating costs. The ozone generator is maintenance-free and generates up to 735 g/h of ozone from compressed air or oxygen.

- Capacity range: 70 – 735 g ozone/h

Ozone system OZONFILT® Compact OMVb

OZONFILT® Compact OMVb is a complete, ready-to-use system solution for the generation and metering of ozone. The components are perfectly coordinated to each other.

- Capacity range: 20 – 70 g ozone/h

Performance overview of ozone systems

The operating gas and the desired ozone concentration are key here.
Refer to the guide below to find out which ozone system is best suited
to your purposes.

	OZVb	OZMa 1-6 A	OZMa 1-6 O

Performance [g Ozon/h]

1.000
500
200
100
50
20
10
5
2

Overview of chlorine dioxide systems

This agent disinfects regardless of the pH. It has a very good sustained-release effect and remains active in the pipes for anything from many hours to several days. With chlorine dioxide it is even possible to treat entire water systems against legionella because it reliably breaks down biofilms in pipework and tanks.

Chlorine dioxide system Bello Zon® CDLb

Chlorine dioxide system for production of a chlorine-free chlorine dioxide liquid, especially suitable for multiple points of injection. Bello Zon® CDLb produces ClO_2 discontinuously using the acid/chlorite process with diluted chemicals.

- 0 – 120 g/h preparation capacity with storage of up to 60 g of chlorine dioxide for peak metering. Max. flow at 0.2 ppm ClO_2 metering is 600 m³/h

Chlorine dioxide system Bello Zon® CDVd

Chlorine dioxide system for the metering of chlorine dioxide with diluted starting chemicals. The certified output guarantees efficient chlorine dioxide production. The proven three-stage safety concept protects people and the environment. Bello Zon® CDVd can be easily and safely integrated into any water treatment process.

- 3 – 2,000 g/h chlorine dioxide. Maximum volume of water that can be treated with metering of 0.2 ppm ClO_2, depending on the size of the system: 50 – 10,000 m3/h

Chlorine dioxide system Bello Zon® CDKd

Chlorine dioxide system for the metering of chlorine dioxide with concentrated starting chemicals. The proven three-stage safety concept protects people and the environment. The certified output guarantees efficient chlorine dioxide production. Bello Zon® CDKd can be easily and safely integrated into any water treatment process.

- 8 – 12,000 g/h chlorine dioxide. Maximum volume of water that can be treated with metering of 0.2 ppm ClO_2, depending on the size of the system: 60,000 m3/h

Chlorine dioxide system Bello Zon® CDEb

Chlorine dioxide system which continuously produces ClO_2 using the acid/chlorite process with diluted chemicals. Extremely simple operation, clear construction, analogue control, manual control or control via contacts.

- 5 – 200 g/h chlorine dioxide. Max. flow at 0.2 ppm ClO_2 metering is 1,000 m³/h

**Chlorine dioxide system Bello Zon® CDLb
with multiple points of injection**

Flexible solutions for the production and metering of ClO_2 adapted to the customer's tasks, requirements and price expectations. Made-to-measure systems constructed from modules designed to work together.

- 0 – 120 g/h preparation capacity with storage of up to 60 g of chlorine dioxide for peak metering. Max. flow at 0.2 ppm ClO_2 metering is 600 m^3/h, up to 6 points of injection can be configured as standard.

Performance overview Chlorine dioxide systems

In the performance overview you will find the right system for every application. Can't find your application? No problem! Our specialists love a challenge.

Type	[g/h]	CDLb	CDLb H_2SO_4	CDEb	CDVd	CDKd
	15.000					
	10.000					8 – 12.000
	5.000					
	1.000				3 – 2.000	
	500					
	100	0 – 120		5 – 200		
	50		8 – 89			
	10					
	5					

Manufacturing Method

	Chlorite-Acid (depleted) 7,5 % NaCLo2 + 9 % HCl	Chlorite-Acid 7,5 % NaCLo2 +25% H_2SO_4	Chlorite-Acid (depleted) 7,5 % NaCLo2 + 9 % HCl	Chlorite-Acid (depleted) 7,5 % NaCLo2 + 9 % HCl	Chlorite-Acid (concentrated) 24,5 % NaCLo2 + 25-37 % HCl

Application

Legionella combating	■				
Food and beverages industry	■	■	■	■	
Municipal drinking and waste water treatment	■		■	■	■
Industry (cooling tower, waste/process water, etc.)	■	■	■	■	■

Overview of electrolysis systems

What a great idea: no chemicals to be transported and no need to store and handle hazardous substances. Instead: sophisticated systems use harmless sodium chloride – ordinary salt – to produce chlorine, hydrogen and sodium hydroxide.

Electrolysis system CHLORINSITU IIa

CHLORINSITU® IIa is a compact on-site electrolysis system for the production of a low-chlorate hypochlorite solution from sodium chloride and electrical energy. A key advantage is its simple process management and excellent system safety through integral ventilation and bleeding.

- Output of 60 – 2,500 g/h

Electrolysis system CHLORINSITU IIa XL

CHLORINSITU® IIa XL is a tubular cell electrolysis system for reliable on-site production of large quantities of hypochlorite. When generating hypochlorite solution from a diluted salt solution, the system impresses customers with its improved efficiency from a tried and tested cell design.

- Output of 5 – 45 kg/h

Diaphragm electrolysis system CHLORINSITU III

Need an output of 100 – 10,000 g/h of sodium hypochlorite that is very pure and/or low in chloride and chlorate? Then, the electrolysis system CHLORINSITU® III is the solution for you. Can be used for potable water, waste water, process water, swimming pool water and in cooling towers.

- Output of 100 – 10,000 g/h

Diaphragm electrolysis system CHLORINSITU III Compact

Generation of sodium hypochlorite in smaller amounts for smaller swimming pools: Electrolysis system CHLORINSITU® III Compact.

- Output of 25 – 50 g/h

**Diaphragm electrolysis system
CHLORINSITU IV Compact**

Generate ultra-pure chlorine gas using the vacuum process with electrolysis system CHLORINSITU IV Compact. Cost-effective, robust and compact.

- Output of 25 – 50 g/h

Electrolysis system CHLORINSITU V

Generate ultra-pure active chlorine using the vacuum method with electrolysis system CHLORINSITU V. Suited to applications for metering hypochlorous acid and simultaneously correcting the pH value.

- Output of 100 – 3,500 g/h

Electrolysis system CHLORINSITU V Plus

Generation of active chlorine in combination with a sodium hypochlorite solution using the vacuum process with the electrolysis system CHLORINSITU V Plus. Chlorination and pH value adjustment by one single system.

- Output of 100 – 3,500 g/h

Electrolysis system DULCO®Lyse

Efficient production of DULCOLyt 400 with an exceptionally low chloride and chlorate content. Maximum protection against corrosion and very good cost efficiency due to low chloride.

- Output of 100 – 300 g/h

Performance overview of electrolysis systems

We offer a range of solutions for potable, process and swimming pool water. You can find various application combinations in the table below. If you have a specific problem, don't hesitate to ask our specialists. If they don't have a solution ready to hand, they will find one. That's guaranteed.

Output [g/h]	CHLORINSITU® IIa	CHLORINSITU® IIaXL	CHLORINSITU® III	CHLORINSITU® V	CHLORINSITU® V Plus
40.000					
30.000					
20.000					
10.000					
9.000				Higher capacity ratings available on request	Higher capacity ratings available on request
8.000					
7.000					
6.000					
5.000					
4.000					
3.000					
2.000					
1.000					
Production of HOCl				■	■
Production of NaOCl	■	■	■		■
Application					
Drinking water	■	■	■	■	■
Waste water	■	■	■	■	■
Process water	■	■	■	■	■
Swimming pool water	■	■	■	■	■
Cooling towers			■	■	■

Output [g/h]	DULCOLYSE	CHLORINSITU® III & IV compact
400		
300		
200		
100		
Production of HOCl	■	■
Production of NaOCl		■
Application		
Food and beverage industries	■	
Potable water		■

Overview of chlorine gas metering system DULCO®Vaq

In the metering system DULCO®Vaq, chlorine gas is safely handled under a vacuum. The negative pressure generated in the injector opens the vacuum dosing regulator fitted on the chlorine gas tank and the chlorine gas enters the water to be treated. Adjustment valves control the metering volume and rotameters precisely indicate the chlorine gas flow. A large number of individual configurations is provided for by the use of additional components, such as motorised control valves, injectors or vacuum switch-overs.

ProMinent specialists take into consideration all safety-related requirements in the design of the chlorine gas metering system.
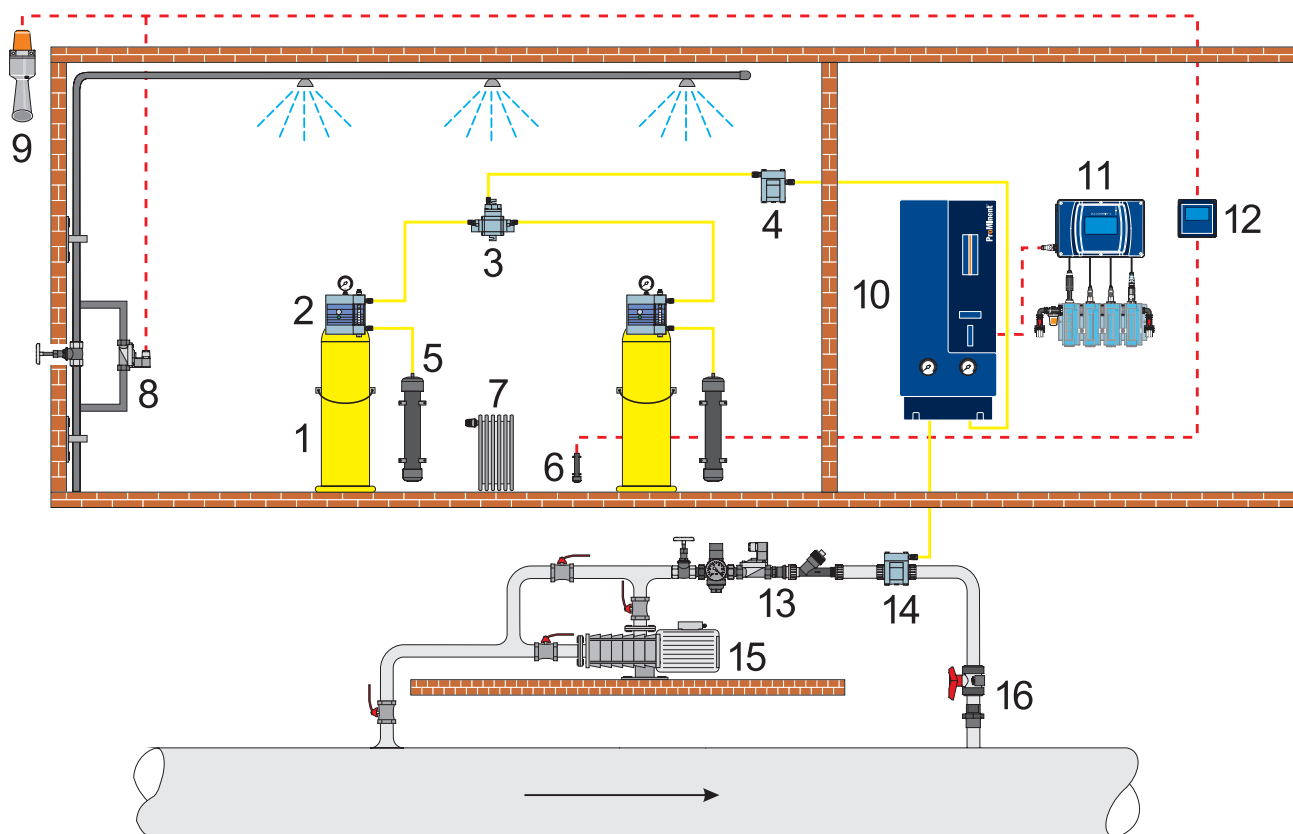
1 Chlorine gas bottle	2 Vacuum dosing regulator	3 Vacuum switch-over
4 Vacuum safety valve	5 Active carbon filter	6 Gas warning sensor
7 Heating	8 Sprinkler system	9 Combined flashing light/horn
10 Automatic chlorine metering unit	11 Dulcomarin	12 Gas detector
13 Process water kit	14 Injector	15 Booster pump
16 Injection point monitoring		

Vacuum dosing regulator for chlorine gas DULCO®Vaq

The vacuum dosing regulator DULCO®Vaq CGVa meters chlorine gas cost-effectively and efficiently. Maximum possible operating safety and reliability are ensured by the use of high-quality materials, such as tantalum and silver.

■ Capacity: up to 200 kg/h

Motorised control valve for chlorine gas DULCO®Vaq

The motorised control valve for chlorine gas DULCO®Vaq type PM 3531 ensures precise electronically controlled metering of the chlorine gas flow. The linear control characteristic is guaranteed by an externally controlled step motor.

■ Capacity: 12 g/h to 15 kg/h

Automatic chlorine gas metering system DULCO®Vaq

The chlorine gas metering system DULCO®Vaq type PM 3610 C for automatically controlled metering of chlorine gas. Its simple operation offers safety and precision based on the current state of the art, in compliance with the DIN standard.

■ Capacity: 12 g/h - 15 kg/h

Automatic emergency shut-off system for chlorine gas DULCO®Vaq

The electrical emergency shut-down system provides additional safety to personnel and equipment by automatically closing off the chlorine gas supply.
With its own control unit and uninterrupted power supply, it reliably closes off the chlorine gas sources even in the event of a power failure.

■ Automatic closing of the chlorine gas valves in seconds.

Overview of metering systems Ultromat®

Metering systems for polymers

The elimination of solids from liquids requires the use of liquid or powder polymers. This is achieved with polymer batching and metering systems. The experts in waste water treatment at ProMinent understand how to provide the efficient technology to implement this specialist application. For the most stringent requirements, they developed Ultromat® metering systems, which are especially easy to assemble and operate.

Metering system Ultromat® ULFa (continuous flow system)

Polymer batching system Ultromat® ULFa (continuous flow system): This metering system can be used to batch flocculation aids for the preparation of a ready-to-use polymer solution. The system was designed for the fully automatic batching of polymer solutions.

■ Extraction rate up to 8,000 l/h

Metering system Ultromat® ULPa (oscillating system)

The metering system Ultromat® ULPa (oscillating system) is ideal for batching flocculation aids for the preparation of a ready-to-use polymer solution.

■ Extraction rates of 400 – 4,000 l/h

Metering system Ultromat® ULDa (double-deck)

The metering system Ultromat® ULDa from ProMinent is an automatic polyelectrolyte preparation system. It is useful wherever synthetic polymers need to be automatically prepared as polymer solutions to act as flocculation aids.

■ Extraction rate up to 2,000 l/h

Metering system Ultromat® MT for batches

Manual polymer batching system Ultromat® MT: perfect metering system for the processing of small quantities of liquid and powdered polymers – extremely robust and cost-effective.

■ Capacity range: 120 – 3,800 l/h

Metering system Ultromat® ULIa (inline system liquid)

The polymer batching system Ultromat® ULIa is an inline system and processes liquid polymers to produce a fully activated solution. It is ideally equipped for your application with integrated mixing and maturing chamber and novel peristaltic metering pump.

- Extraction rate: up to 2,000 l/h

Metering system PolyRex

The metering system PolyRex is a double-decker batching station for the processing of liquid and powdered polymers. It consists of the feed and mixer unit and the two stainless steel double-decker tanks. The polymers used are ideally utilised.

- Capacity range: up to 8,200 l/h

Selection guide for metering systems Ultromat®

Extration rate max. in (l/h)	ULFa	ULPa	ULDa	ULIa	MT	Polyrex
18.000						
8.000						
6.000						
4.000						
2.000						
1.000						
400						

Metering and drainage station

DULCODOS® SAFE-IBC is a special metering and drainage station for Intermediate Bulk Containers (IBC) with almost complete residual drainage. Thanks uninterrupted metering into the process, it offers maximum process reliability. It conforms to the modified legislature for liquids harmful to water in accordance with the German Ordinance for Systems Handling Substances Harmful to Water (AwSV).

Metering and drainage station
DULCODOS® SAFE-IBC

DULCODOS® SAFE-IBC offers secure installation of an IBC on a special roll-under collecting pan construction. Any drops are reliably collected and cannot escape at the installation place.

- Storage and drainage of IBCs up to 1,000 l
- Metering chemicals up to 1,000 l/h

Metering systems for solids

ProMinent supplies everything you need for metering and treating solids in your production process. We even have cost-effective solutions for problematic applications, for example substances with noticeable weight fluctuations or problems with bridging.

Tomal® Big Bag emptying unit

This emptying unit is used to accommodate and empty Big Bags weighing up to 1,000 kg. The Big Bags are suspended in the frame with the aid of a lifting cross bar. The 30-litre powder storage tank is used to transfer the powder into a feed unit.

■ Emptying of Big Bags up to 1,000 kg
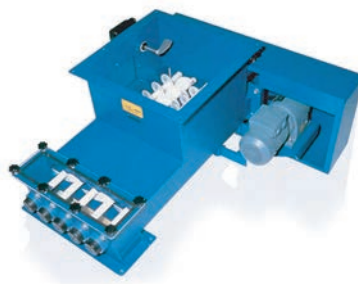
Tomal® multi-screw feeder

Its unique construction makes the multi-screw feeder ideally suited for metering powders and granulates.

Overview of membrane filtration systems

ProMinent is an expert in membrane filtration and supplies a wide range of high-quality plant engineering. Combined with the extensive product range of our ProMaqua® brand, made-to-measure solutions can be developed. ProMinent membrane technology covers ultrafiltration, nanofiltration and reverse osmosis, including pre- and post-treatment precisely matched to the membrane system.

Ultrafiltration system Dulcoclean® UF

Ultrafiltration system Dulcoclean® UF reliably and safely uses membrane technology to remove turbidity, particles and microbiological contamination.

- 8 – 75 m³/h filtrate output

Nanofiltration system Dulcosmose® product range NF

As a nanofiltration system, the Dulcosmose® NF, a compact and value-for-money unit, can handle partial desalination in industrial applications. Maximum permeate output at low operating pressures ensures low investment and operating costs thanks to the latest "ultra low pressure" diaphragm.

- Permeate outputs of 1 – 50 m³/h, higher outputs possible on request

Reverse osmosis system Dulcosmose® product range TW

Reverse osmosis system Dulcosmose® TW is the all-purpose model for modern potable water desalination. Maximum permeate output at low operating pressures ensures low investment and operating costs.

- Permeate output 0.1 – 50 m³/h

Reverse osmosis system Dulcosmose® product range BW

Reverse osmosis system Dulcosmose® BW is the standard model for the modern desalination of brackish water. Equipped with the latest generation of "high rejection low-pressure" diaphragms, this system achieves maximum permeate output with moderate operating pressures, thereby lowering investment and operating costs.

- Permeate output 2,000 – 50,000 l/h

Reverse osmosis system Dulcosmose® product range SW

Reverse osmosis system Dulcosmose® SW is the standard model for the modern desalination of seawater. Equipped with the latest generation of "high rejection low-pressure" diaphragms, this system achieves maximum permeate output with moderate operating pressures, thereby lowering investment and operating costs.

- Permeate output 780 – 29,000 l/h

Performance overview of reverse osmosis

Explanation of abbreviations: TW: potable water, BW: brackish water, SW: seawater. All you need to do is select your required performance level – then you can sit back and rely on the excellent service of our ProMinent specialists.

Type	TW	BW	SW
Permeat-output [m³/h] 50			
25			
10			
5			
2,5			
1			
0,5			
0,25			
0,1			
Salinity Drinking water	< 1.000 mg/l	< 5.000 mg/l	< 40.000 mg/l

Notes

# Customer Services - Service unlimited

Once you've purchased a ProMinent product, we won't abandon you. After all, a product is only as good as the service it comes with. Our experts are here to help – whether it's with commissioning, maintenance, repairs or technical support.
We provide a huge range of services depending on what you need and want. This helps to keep your product in perfect condition – and does so for a clearly calculable cost.

It goes without saying that our service has been adapted to the new normal and we can provide digital services too, so we can help you with your system without having to attend in person. Everything can be done digitally and with ease. No matter where you are in the world, whether you want digital or analogue support – we are here for you. With more than 50 subsidiaries and over 20 service centres worldwide, there is always a specialist nearby.

50+
subsidiaries
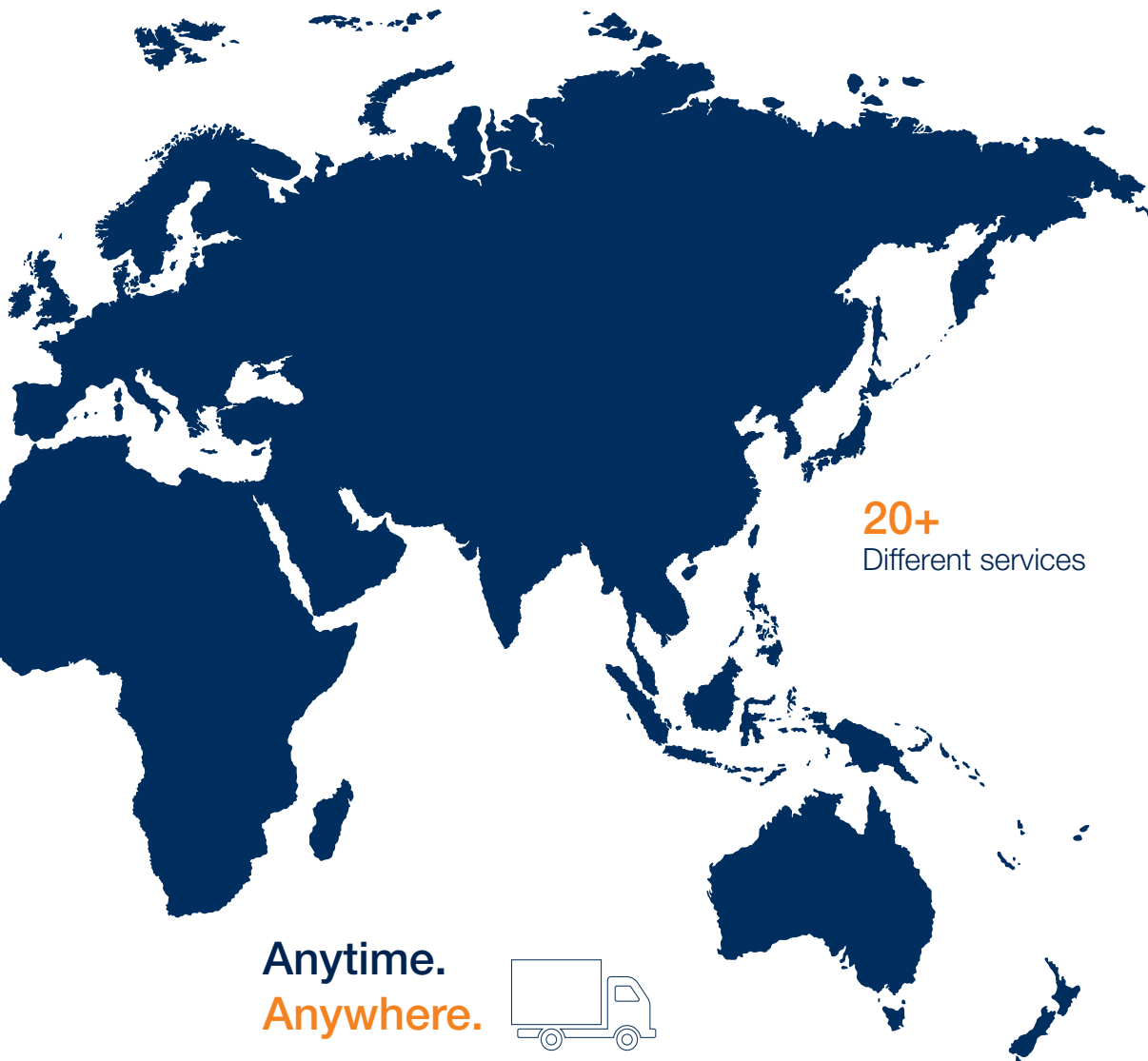service centres
worldwide
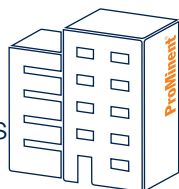
40+
service staff
Germany

200+
service staff
worldwide

"Every single product comes
        with a dedicated service promise."

20+
Different services

Anytime.
Anywhere.

Overview of services

Service hotlines

Of course, we are always here for you and are available to answer your questions by phone. And if you want a little bit more service, you can count on us outside of our normal working hours. Because we know how important it is for your system to be running smoothly.

- Support hotline
- 24/7 service hotline

Smart services

Everyone is talking about digitalisation. But it comes as standard with our service. Tap into our digital options. They speed up everything and more importantly make everything simpler. Don't worry, it certainly doesn't make things more complicated. And safety is always a priority for us. Our service is heading in a new direction. We'd like you to come with us!

- Smart Support

Material services

Availability of materials, matched perfectly to your ProMinent system, makes you flexible and independent. We can provide maintenance and repair materials or our material boxes, which you can store on-site. Then you are set up perfectly and you can keep your ProMinent system perfectly maintained.

- Maintenance material
- Repair material
- Maintenance material box
- Repairs material box

On-site services

ProMinent service technicians are there for you whenever you need them. And better still: just where you need them – in other words, on site on your system. Tap into the benefits of our services for maintenance, inspections and repairs. It's not just you who stands to gain from the know-how of our experts – your ProMinent system will benefit too.

- Commissioning
- Inspection
- Maintenance
- Repairs

Express services

Should anything go wrong, you can rely on us. A specialist or the replacement material you need will be with you as quickly as possible.

- 24-hour on-site service
- 48-hour on-site service
- 24-hour on-site material service

Warranty services

When you purchase a ProMinent system, you've already opted for optimum quality and reliability.
Our attractive extended warranty, coupled with our service agreements, also sets you up perfectly in the long term for worst-case scenarios.

Training services

The better you understand your ProMinent product, the better you can use and care for it. That is why we are sharing our knowledge with you first hand. Build on your product knowledge in levels ranging from the basics of how things work to professional expertise. Safety will become a matter of course and you will be ready for anything.

- Service training level 1
- Service training level 2
- Service training level 3

Service packages

Three packages – one goal: optimum service for your ProMinent system. With the ProMinent service packages, your ProMinent system is always in perfect condition – for a clearly calculable cost. Scheduled service intervals and the genuine ProMinent parts used at them extend the life of your system and deliver a smooth production process with maximum planning certainty. Benefits which pay off.

- Standard
- Comfort
- Premium

Not all services are available in all countries

ProMinent – the 2021 range

Your digital reference source.
Wherever you want. Whenever you want.

Digital solutions

Metering technology

Measuring, control and sensor technology

Water treatment and disinfection

Customer services

You will find more information about our products at www.prominent.com

ProMinent GmbH

info@prominent.com
www.prominent.com

ProMinent®