Product Overview 2022

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Products for chemical fluid handling, water treatment and disinfection as well as digital solutions

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

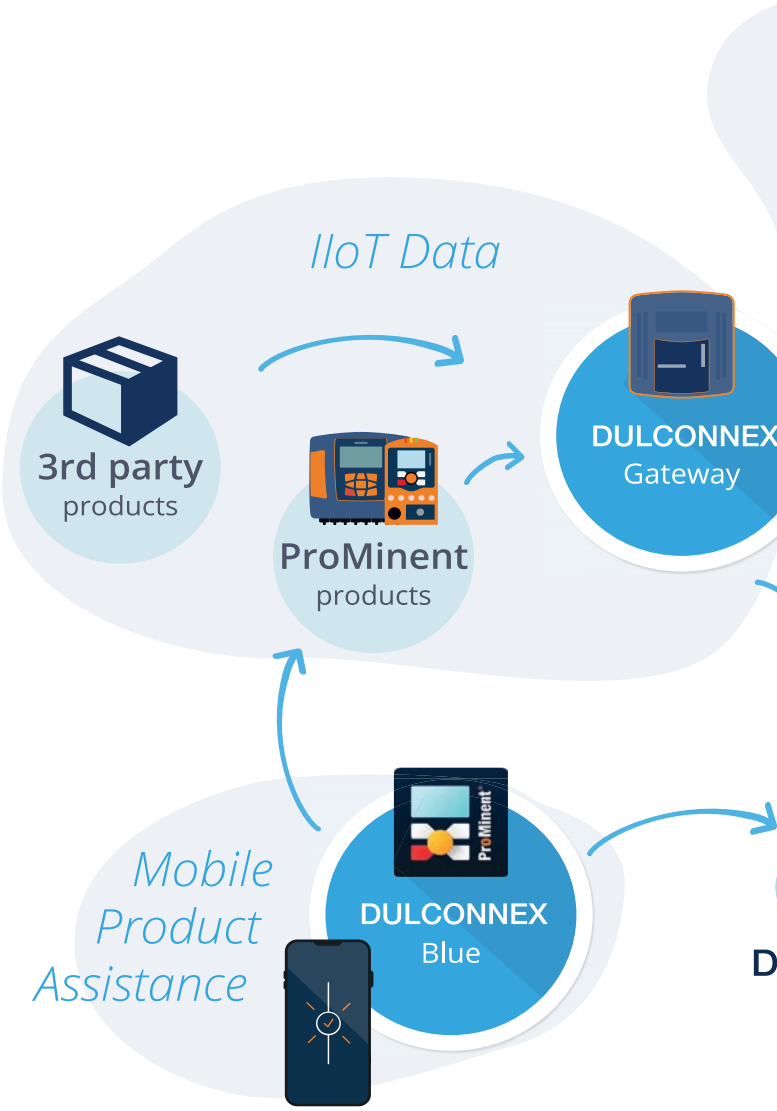
The modular ProMinent range enables our customers in a wide range of industries to achieve maximum safety and efficiency in their production processes, at all times and in any location. For us, customer proximity means working with the customer to find the right solution for individual needs. Personal,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

Digital solutions

DULCONNEX –
IIoT* solution for digital fluid management

ProMinent's DULCONNEX is a cloud-based IIoT solution for digitally networking your system components. DULCONNEX is based on robust, network-compatible products that can be individually adapted to operating conditions. As all the components of a system are linked, metering pumps, disinfection systems, controllers and sensors can interact in an optimised manner – increasing process reliability and system efficiency.

* Industrial Internet of Things

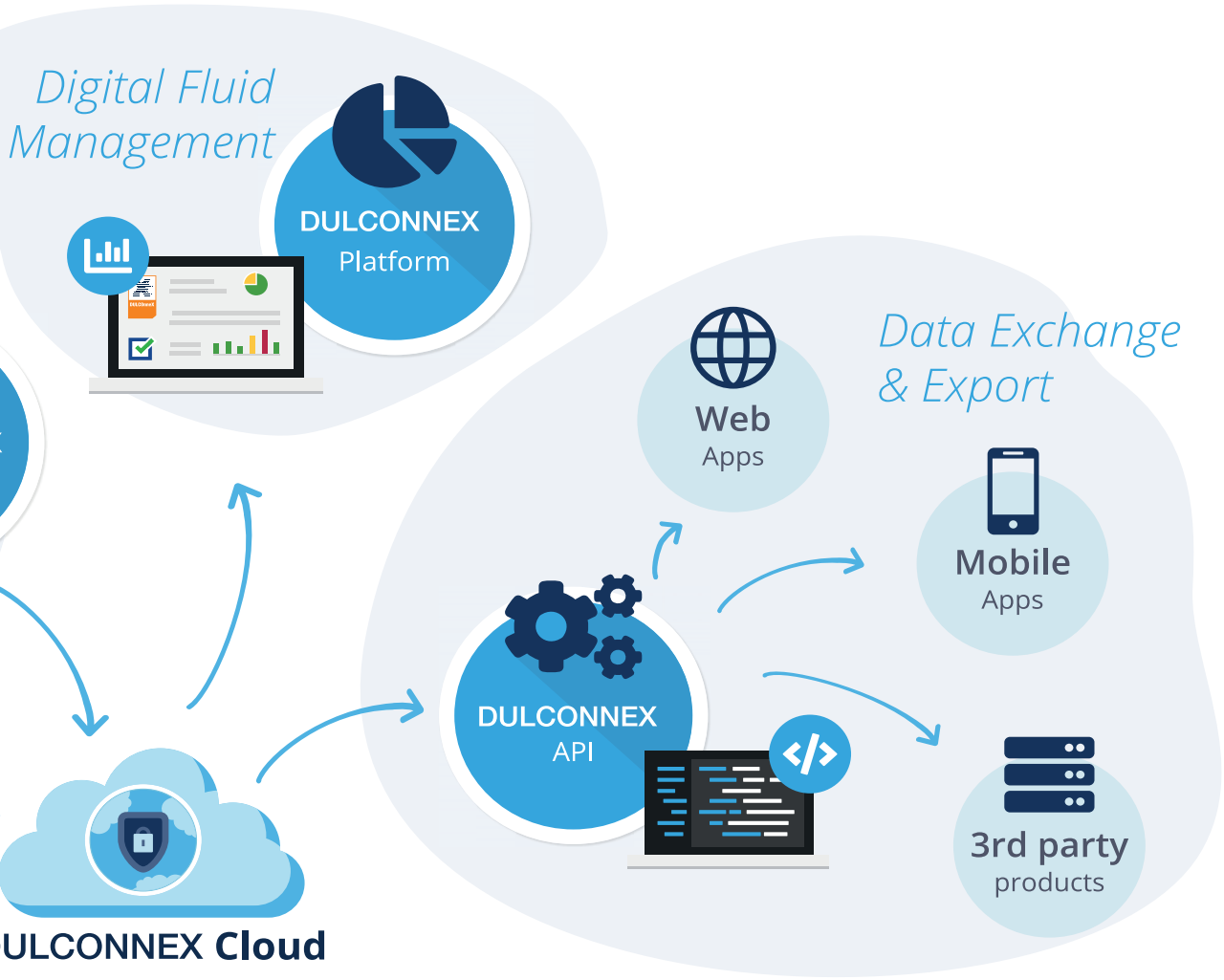


DULCONNEX Platform –
Web-based IIoT platform for digital fluid management

DULCONNEX Platform is a web-based IIoT platform for digital fluid management. The web application provides simple access to all relevant system and process data regardless of location and thereby improves system availability. By continuously monitoring important parameters, process quality can be optimised and staff safety increased.

DULCONNEX Gateway –
Allow secure and reliable provision of IIoT data

Our DULCONNEX Gateway enables all smart products to be connected to our web-based fluid management platform. Using a gateway matched to the product ensures smooth and reliable operation. It reliably transmits SSL/TLS-encrypted system data to the DULCONNEX Cloud via a secure Wi-Fi connection.



DULCONNEX API –
Data exchange and export

As an optional DULCONNEX function, ProMinent provides the DULCONNEX API programming interface. This is used to read out the raw data produced from the cloud and make it available for further processing.

DULCONNEX Blue –
Mobile app for Android and iOS

The next generation of mobile product assistance from ProMinent – DULCONNEX Blue. The app allows the solenoid-driven metering pump gamma/ X to be conveniently controlled via Bluetooth. Other DULCONNEX-compatible products will be added shortly as part of continuous development of the app.

Data security

The architecture of DULCONNEX is already designed to achieve maximum safety and reliably protect your data. For example, there is a systematic separation of user-specific data and measured values. In addition, all measured values are anonymised internally and the entire system is regularly inspected by professional IT safety service providers for possible gaps in safety.

DULCONNEX fluid management – Benefits for you

DULCONNEX Platform

- Information about various installation locations in “one” place
- Increased system availability and optimised process quality
- Complete history of measured values, parameters and events
- Remote monitoring of devices in potentially dangerous environments
- Plan service calls more efficiently and prepare for them more effectively

DULCONNEX API

- Data integration in existing process control systems
- Data exchange with other digital third party solutions
- Access to raw data from DULCONNEX-compatible devices and individual further processing

DULCONNEX Blue – Mobile app

- Reliable remote control of supported ProMinent products
- User-friendly operation by means of intuitive interface and multi-lingualism (DE, EN, FR, ES, ... other languages are being planned)
- Live monitoring of device status and performance data from a safe distance
- Efficient commissioning by simply copying the configuration from one pump to other pumps

GET IT ON Google Play

Available on the App Store

Standard supported products

DULCONNEX

Pumps

- Solenoid-driven metering pump gamma/ X
- Solenoid-driven metering pump gamma/ XL
- Motor-driven metering pump sigma X/sigma hygienic
- Peristaltic metering pump DULCOFLEX DFXa
- Peristaltic metering pump DULCOFLEX DFYa
- Peristaltic pump DULCOFLEX DF4a

Controllers

- AEGIS II / SLIMFLEX 5a
- DULCOMETER diaLog DACb

Water treatment and disinfection systems

- UV systems DULCODES LP/LP-PE/LP certified/LP F&B
- UV system DULCODES MP
- Chlorine dioxide systems Bello Zon CDKd/CDVd
- Chlorine dioxide system Bello Zon CDLb
- Electrolysis system CHLORINSITU IIa 60–300 g/h

Industrial standard signals via dedicated I/O modules

- Digital inputs (relays, also with counter)
- Analogue inputs (4…20 mA)

The DULCONNEX platform can be accessed at
https://www.dulconnex.com/welcome.html
Don't hesitate to contact us for free trial access.

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 dosing 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.

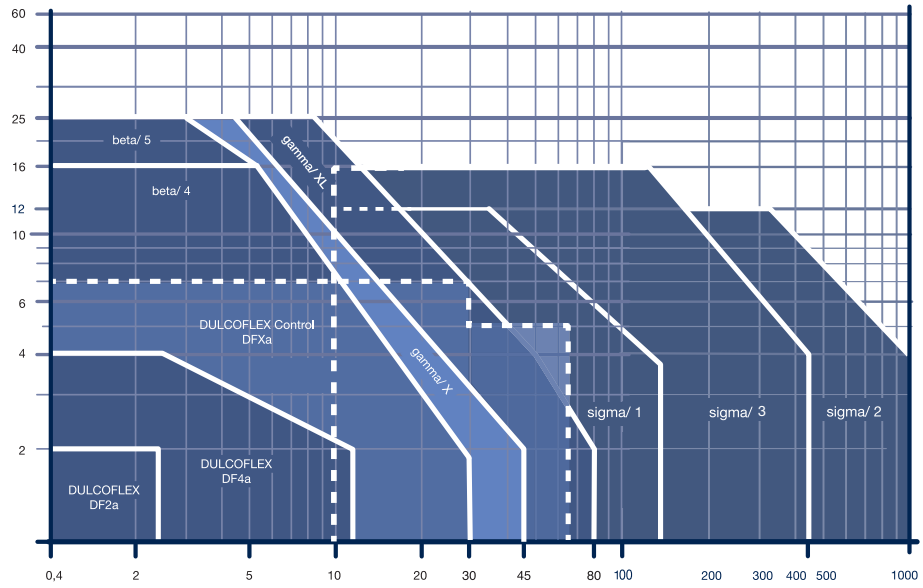
Microprocessor technology since 1988

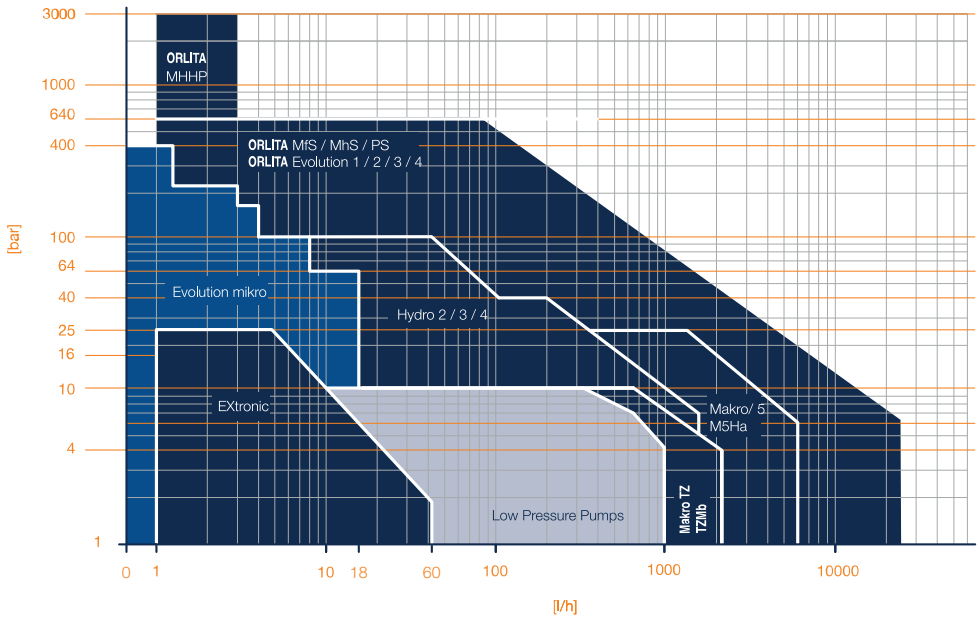
Microprocessor technology allows the pumps to be controlled with accuracy. Sophisticated monitoring functions ensure operational reliability and guarantee minimal chemical consumption yet optimum disinfection.
Interfaces integrate the pumps into a fully automated process.

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.

Performance overview
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
- Select the pump type that lies nearest to it





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

Simple all-purpose solenoid metering pump for metering liquid media in water treatment and chemical processes: Cost-effective, overload-proof, can be adapted to signal transducers present.

- Capacity range: 0.74 – 32 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 to 10 ml/stroke

DULCONNEX

Solenoid-driven metering pump gamma/ X

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

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

DULCONNEX

Solenoid-driven metering pump gamma/ XL

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

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

Peristaltic metering pumps

Peristaltic metering pumps DULCOFLEX Control 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 broad chemical compatibility of the high-performance hoses used by ProMinent are particularly impressive.

Peristaltic metering pump DULCOFLEX DFXa

The peristaltic metering pump DULCOFLEX DFXa meters outgassing, viscous, abrasive or shear-sensitive media. Linear and reproducible metering (± 2 %) is guaranteed with this peristaltic pump under all process conditions.

- Capacity range: 6ml/h – 65 l/h, at up to 7 bar

Peristaltic metering pump DULCOFLEX DFYa

The valveless peristaltic metering pump DULCOFLEX DFYa guarantees precise, linear and reproducible metering in all process conditions. It meters outgassing, viscose, shear-sensitive media, possibly containing particles, with ease.

- Capacity range: 5.1 l/h – 410 l/h, at up to 8 bar

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 sigma/ 1 (Basic type)

The sigma/ 1 Basic is an extremely robust motor-driven metering pump with a 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

Solenoid-driven metering pump sigma/ 3

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 – 4 bar

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

The sigma Control type is a smart, flexible motor-driven metering pump that is setting new standards in terms of operating convenience, reliability and safety.

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

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

The sigma Control type is a smart, flexible motor-driven metering pump that is setting new standards in terms of operating convenience, reliability and safety.

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

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

The sigma Control type is a smart, flexible motor-driven metering pump that is setting new standards in terms of operating convenience, reliability and safety.

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

Motor-driven metering pump sigma Hygienic

The Hygienic Design version of the sigma diaphragm metering pump is optimised in terms of dead space, features as few gaps as possible and has smooth, wetted surfaces for flexible and easy use in hygienically sensitive applications.

- Capacity range: 25 – 1,000 l/h, 10 – 4 bar

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 EMFa

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 relatively minimal maintenance.

- Capacity range: 0.01 – 18 l/h, 400 – 10 bar

Hydraulic diaphragm metering pump
HYDRO HA1a, HA2a, HA3a, HA4a

This product range meets 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:

HA1a	0 – 18.1 l/h, 100 – 10 bar
HA2a	13 – 91 l/h, 100 – 10 bar
HA3a	11 – 201 l/h, 100 – 10 bar
HA4a	242 – 1,506 l/h, 40 – 7 bar

Hydraulic diaphragm metering pump
HYDRO HP2a, HP3a

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	0 – 180 l/h, 100 – 25 bar

Hydraulic diaphragm metering pump
HYDRO HP4a

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

The Orlita Evolution product range is designed to comply with API.

Hydraulic diaphragm metering pump with stainless steel liquid end Orlita Evolution EF1a, EF2a, EF3a, EF4a

This product range with stroke lengths of 16 to 40 mm offers a number of power end versions, including some for use in Zone 1 or Zone 2 areas at risk from explosion with ATEX certification.

- Capacity range: EF1a 3 – 540 l/h, 400 – 9 bar
  EF2a 6 – 960 l/h, 400 – 12 bar
  EF3a 24 – 2,577 l/h, 397 – 6 bar
  EF3a 66 – 7,400 l/h, 400 – 12 bar

Hydraulic diaphragm metering pump with plastic liquid end Orlita Evolution EF1a, EF2a, EF3a, EF4a

Also available with “Plastic dosing head”. The PVC and PVDF wetted materials enable the even more flexible use of this industry-safe pump in an even greater number of applications.

- Capacity range: EF1a 3 – 540 l/h, 21 – 8 bar
  EF2a 6 – 540 l/h, 21 – 6 bar
  EF3a 320 – 2300 l/h, 16 – 12 bar
  EF3a 670 – 7400 l/h, 10 bar

Plunger metering pump
Orlita Evolution EP1a, EP2a

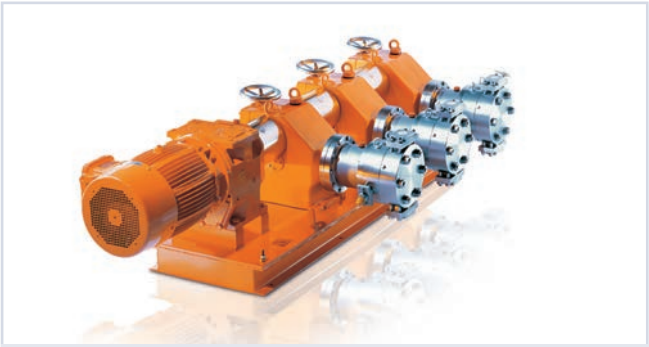
The Orlita Evolution plunger metering pumps EP1a and EP2a form an integrated product range with stroke lengths of 16 to 40 mm. A wide range of power end versions is available, including some for use in Zone 1 or Zone 2 areas at risk from explosion with ATEX certification.

- Capacity range: EP1a 5 – 540 l/h, 330 – 9 bar
  EP2a 5 – 540 l/h, 520 – 22 bar

Hydraulic diaphragm metering pump
Orlita Evolution EF1F, EF2F, EF3F, EF4F

The Orlita Evolution EF1F to EF4F form an integrated product range with stroke lengths of 16 to 40 mm. The products can be used in Zone 1 or Zone 2 areas at risk from explosion with ATEX certification.

- Capacity range: Size 1 3 – 540 l/h, 400 – 9 bar
  Size 2 6 – 960 l/h, 400 – 12 bar
  Size 3 24 – 2577 l/h, 397 – 6 bar
  Size 4 66 – 7400 l/h, 400 – 12 bar



Hydraulic diaphragm metering pump Orlita MF

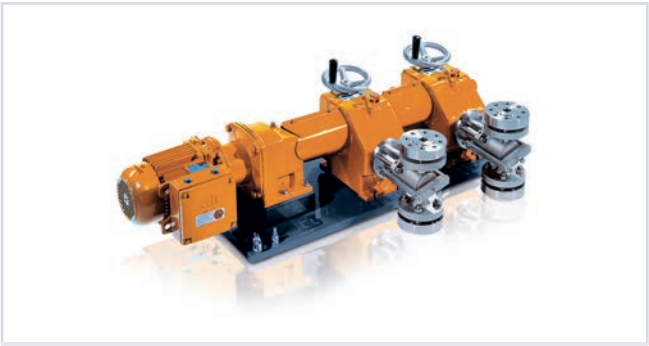
The hydraulic diaphragm metering pump Orlita MF offers reliable capacities even under high pressure and has a modular construction, making it highly versatile. Thanks to its modular construction, this pump is tailored to meet your requirements even at very high pump capacities.

- Capacity range: 0 – 14,000 l/h, 450 – 30 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. A wide range of power end versions is available. Drives, power ends and dosing heads can be freely combined.

- Capacity range: up to 320 l/h, up to 780 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 – 2,800 l/h, 600 – 11 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 – 280 l/h, 400 – 250 bar

Diaphragm pumps and plunger metering pumps MAKRO TZ

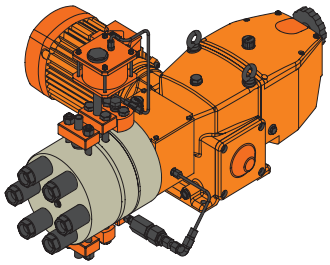
This range of metering pumps has a modular construction and offers an application-matched solution for every use.

- Capacity range:
  Diaphragm pump: 260 – 2,100 l/h, 12 – 4 bar
  Plunger pump: 8 – 1,141 l/h, 320 – 11 bar

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 can be used for higher capacity ranges.

- Capacity range:
  Hydraulic diaphragm pump: 450 – 6,108 l/h, 25 – 6 bar
  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 3000 bar.

- Capacity range: 3 – 11 l/h, 3000 bar

Chemical transfer pumps

**Chemical transfer pumps are used to pump liquids from tank A to tank B.
Different media have very different chemical properties so the pumps need different functional principles. Liquid and pump must be fully compatible. The same ProMinent standards of maximum diligence and quality are applied to every single task.**

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 DULCOTRANS

The field of application of the DULCOTRANS depends on the chemical resistance of the materials used.

- Pump capacity according to size 900, 2800 or 3750 l/h

Tanks

Standard tanks for chemical storage and transfer are a fixed element of the ProMinent range. However, if you have specific requirements ProMinent can also supply tanks customised to a wide range of specifications.

Rotary lobe pump ROTADOS

The compact rotary lobe pump pumps viscous and even abrasive media at up to 100 m^3/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 m^3/h, 10 – 4 bar

Dosing tanks and retaining tanks

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

- Useful capacity of 35 – 1,500 l

In combination with chemical transfer pumps and peristaltic pumps, the tanks and retaining tanks can be used for metering tasks in many applications with virtually any conceivable pump capacity.

Peristaltic pumps

Peristaltic pumps DULCOFLEX are amongst the most adaptable pumps available from ProMinent. 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 DULCOFLEX DF2a

The peristaltic pump DULCOFLEX 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 DULCOFLEX DF4a

The peristaltic pump DULCOFLEX 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 DULCOFLEX DFBa

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

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

Peristaltic pump DULCOFLEX DFDa

The peristaltic pump DULCOFLEX 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, 15 bar

Peristaltic pump DULCOFLEX DFCa

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

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

Metering systems DULCODOS

The standard metering systems DULCODOS are the result of years of application-based development work 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 (up to two solenoid-driven metering pumps)

Metering system DULCODOS universal DSUa

The metering system DULCODOS universal combines carefully selected standard components with your chosen solenoid-driven metering pump. This is a convenient method for the reliable metering of liquid chemicals.

- Up to 75 l/h (10 – 2 bar) pump volume depending on the pump selected (up to two solenoid-driven metering pumps)

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.

- Metering rate: 40 – 1,000 l/h depending on the pump selected (1 x motor-driven metering pump)

Metering system DULCODOS panel DSWb

The ready-wired modular metering system DULCODOS panel is used for the ultra-precise metering of chemicals. Maximum flexibility in pump selection and assembly frame dimensions.

- Metering rate: 40 – 1,000 l/h depending on the pump selected (up to two metering pumps; solenoid as well as motor-driven pumps)

Metering system DULCODOS customer-specific

The DULCODOS Customized Solutions combines process reliability and customer-specific metering tasks. Our experts handle the system engineering for your tailor-made application solution.

Metering system DULCODOS eco DSBa

For storing and metering liquid chemicals. The metering system can be easily, quickly and flexibly adapted to your metering task using a selection system (identity code) and can be combined with almost any ProMinent metering pump.

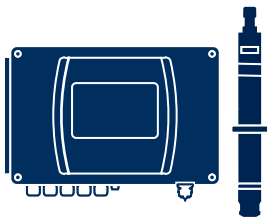
Metering system DULCODOS Ammonia

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 preparation and metering system DULCODOS is used for manual preparation 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

The complete solution for your processes

ProMinent manufactures components and systems for metering technology, is a reliable solutions partner for water treatment and with DULCONNEX, provides a cloud-based digital fluid management solution. Using optimised controllers, ProMinent is able to reliably monitor and control processes in public and industrial water treatment. The product range is accompanied by sensors, developed and produced in-house, for the most common measurement parameters, such as chlorine and pH. Every year, more than 150,000 sensors of the highest quality standards are manufactured at ProMinent sites. This makes ProMinent a complete solutions provider for the optimum metering of liquids, from reliable pump capacity and the correct measurement of all relevant parameters to precise process control.

From the circuit board to the end product

A high degree of vertical integration, extending from in-house production of components and electronic parts to final assembly and quality checks on the finished products, is standard for ProMinent. Glass and plastic parts, which are used to produce electro-chemical sensors and controllers, are manufactured at three European production sites with in-house glass blowing.

This system expertise permits the efficient and rapid development of customised solutions. Years of experience in development, manufacture, sales and service ensure the high quality of our products and their continual further development in line with ev-er-changing customer requirements. We provide comprehensive, expert advice for all ProMinent products.

Sensor technology

Monitoring a limit value or building a closed control circuit is routine with our sensors – and the same can be said for a huge number of measurement applications. The DULCOTEST product family is application-based and ensures precise measurement of a wide range of values. 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.

Selection guide for DULCOTEST pH sensors

Sensor type	Applications	Note	Max. temperature / max. pressure	Number of particles/solids in the application
PHES	Potable water, swimming pool water		60°C / 3 bar	None to a few
PHEK	Swimming pool water, aquariums	Plastic sensor shaft for increased safety when handling; e.g. end customers in the private swimming pool sector	60°C / 3 bar	None to a few
PHEP/PHEPT	Potable water, swimming pool water, process water	PHEPT with integrated temperature sensor	80°C / 6 bar	None to a few
PHED	Process water, electroplating	Chemically contaminated water, e.g. Cr^{6+}, CN^-		None to a few
PHEN	Chemically contaminated water Water with low conductivity ≥ 50 µS/cm	Reference electrolyte is introduced into the sensor using an external bottle and can be topped up	80°C / no overpressure	None to a few
PHER	Industrial and public waste water, cooling towers	Dirt-repellent PTFE diaphragm	80°C / 6 bar	A few to average
PHER-DJ	Reverse osmosis (conductivity ≥ 10 µS/cm), acid and alkaline gas scrubbers (without fluoride, HF) General applications with chemical contamination, which may attack the reference system	Dirt-repellent PTFE diaphragm and a double junction to protect the reference system	80°C / 6 bar	A few to average
PHEI	Industrial and public waste water, cooling towers	Long service life thanks to large quantities of reference electrolyte, double junction and large PTFE diaphragm 3/4" NPT screw-in thread	80°C / 6 bar	A few to average
PHEX	Suspensions, sludge, emulsions	Open ring diaphragm	25°C / 16 bar	Average to many
PHEF	Media containing fluoride at low pH values; e.g. etching solutions containing fluoride in electroplating	Special pH glass with increased resistance to HF	50°C / 7 bar	A few to average
PHEF-DJ	Media containing fluoride at low pH values; e.g. gas scrubbers used to scrub gases containing fluoride	Special pH glass with increased resistance to HF	60°C / 8 bar	A few to average
PHEP-H	Process water with high pH values (> pH 12)	Special pH glass with increased resistance to high pH values	80°C / 6 bar	None to a few

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 ORP sensors

Sensor type	Applications	Note	Max. temperature / max. pressure	Number of particles/solids in the application
RHES Pt	Potable water, swimming pool water		60°C / 3 bar	None to a few
RHES Au	Swimming pool water	ORP sensors with gold electrode are not susceptible to hydrogen produced by the generation of chlorine by open electrolysis systems. A gold electrode is also well suited to ozone applications.	60°C / 3 bar	
RHEK Pt	Swimming pool water, aquariums	Plastic sensor shaft for increased safety when handling; e.g. end customers in the private swimming pool sector	60°C / 3 bar	None to a few
RHEKL Pt	Swimming pool water, aquariums	Vertical installation is possible thanks to two diaphragms	60°C / 3 bar	None to a few
RHEP Pt	Potable water, swimming pool water, process water		80°C / 6 bar	None to a few
RHEP Au	Potable water, swimming pool water, process water	ORP sensors with gold electrode are not susceptible to hydrogen produced by the generation of chlorine by open electrolysis systems. A gold electrode is also well suited to ozone applications.	80°C / 6 bar	None to a few
RHEN Pt	Chemically contaminated water Water with low conductivity ≥ 50 µS/cm	Reference electrolyte is introduced into the sensor using an external bottle and can be topped up	80°C / no overpressure	None to a few
RHER Pt	Industrial and public waste water, cooling towers	Dirt-repellent PTFE diaphragm	80°C / 6 bar	A few to average
RHER-DJ	Reverse osmosis (conductivity ≥ 10 µS/cm) General applications with chemical contamination, which may attack the reference system	Dirt-repellent PTFE diaphragm and a double junction to protect the reference system	80°C / 6 bar	A few to average
RHEIC	Industrial and public waste water, cooling towers	Long service life thanks to large quantities of reference electrolyte, double junction and large PTFE diaphragm 3/4" NPT screw-in thread	80°C / 6 bar	A few to average
RHEX	Suspensions, sludge, emulsions	Open ring diaphragm	25°C / 16 bar	Average to many

Selection guide for amperometric sensors

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, process water and waste water	0.01 - 10 mg/l	D1C, DAC, AEGIS II	CTE 1-mA-xppm
Total chlorine	Potable water, process water and waste water	0.01 - 10 mg/l	DMT	CTE 1-DMT-xppm
Total chlorine	Potable 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 water, 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, cooling water	0.02 - 2 mg/l	D1C, DAC	OZR 1-mA-2 ppm
Dissolved oxygen	Clarification plant aeration tanks, fish farming, potable water, surface water	0.1 - 20 mg/l	D1C, DAC	DO 3-mA-xppm
Dissolved oxygen	Clarification plant aeration tanks	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
Peracetic acid	Waste water, low concentrations	0.02 - 20.0 mg/l	D1C, DAC	PAA 2-3E-mA-20ppm
Hydrogen peroxide	Clear water, fast control	1 - 2,000 mg/l	DAC	Perox sensor, PEROX-H2.10 P
Hydrogen peroxide	Cooling water, waste water, process water	20 - 2,000 mg/l	D1C, DAC	PER1-mA-xppm
Hydrogen peroxide	Swimming pool water, plant irrigation water, low concentrations	0.2 - 500 mg/l	D1C, DAC	PEROX H-3E-mA-xppm

Overview of sensors

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.

Amperometric sensors with analogue output DULCOTEST

The amperometric sensors in the DULCOTEST range deliver selective and precise measured values in real time for a very wide range of disinfectants for all important disinfectants and oxidising agents used in water treatment.

Amperometric sensors with CAN bus communication DULCOTEST

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

Selection guide for conductivity sensors

Conductivity > 20 mS/cm and/or film-forming medium and/or chemically aggressive medium

yes

Inductive conductivity measurement

Compact controller can be used in the application?

yes

Do the following conditions exist?
Aggressive chemicals,
with the exception of lyes and/or
temperatures > 80 °C and/or
measured value < 200 µS/cm

yes

Series ICT 2
Installation in pipes
with stainless
steel flange accessory

For immersion with
accessory: immersion
fitting IMA - ICT 2

no

Type ICT5
for installation in pipes

Type ICT 5-IMA
for immersion

no

Type ICT 8
for installation in pipes
with adaptor accessory,
for immersion with
immersion fitting accessory

no

Conductive conductivity measurement

Further selection according to summary table:

- Measuring range
- Material (chemical compatibility)
- Temperature
- Hydraulic process connection
- Electrical connection
- Compatibility of controllers

Product ranges LF, LMP, CK, CCT

Sensors for electrolytic conductivity

Conductivity sensors for optimum process integration: DULCOTEST 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

Turbidity sensors

Turbidity measurements with DULCO turb C: compact measuring instruments that use 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 ranges 0 - 1000 NTU

Measuring and control technology

Selection guide

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

Function	DACb	Compact	D1Cb	D1Cc
Measured variables				
pH	■	■	■	■
ORP	■	■	■	■
Chlorine	■	■	■	■
Chlorine dioxide	■		■	■
Chlorite	■		■	■
Bromine	■		■	■
Conductive conductivity	■	■		
Inductive conductivity		■		
Conductivity via mA	■		■	■
Peracetic acid	■		■	■
Hydrogen peroxide	■		■	■
Ozone	■		■	■
Dissolved oxygen	■		■	■
Fluoride	■		■	■
0/4...20 mA standard signal general measured variables	■		■	■
Power supply				
100 - 240 V AC	■	■	■	■
24 V DC	■			
Method of installation, degree of protection				
Wall mounted IP 65			■	
Mounted on control panel IP 54 1/4 DIN				■
Combination housing (wall mounting, control panel mounting, pillar assembly) IP 67, IP 54	■	■		
Measurement				
Number of measuring channels	2 or 3	1	1	1
Sensor monitoring for 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)	■			■

Measuring and control instruments from ProMinent are adapted to the relevant application in virtually every process environment. 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

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.

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 DULCOMARIN 3 is now compatible with the modules of the DULCOMARIN II, meaning that it can take the place of the central unit.

Controller SlimFLEX 5a

The cooling tower controller SlimFLEX 5 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.

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 AEGIS S

The cooling tower controller AEGIS S is the basic model yet with high-end features: coloured 5” touch display, web server visualisation via LAN and Wi-Fi, PC configuration software, Modbus RTU interface, summer/winter switchover of biocide metering. In addition to conductivity, other parameters, such as pH, ORP or oxidising biocides can be measured and controlled online.

Panel-mounted measuring and control systems for potable water, F&B and waste water

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. They can be configured with a simple, application-based ordering system. From 13 different measuring parameters you can choose up to 3 measuring and control points, available at the same time, 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 or water of a similar quality to potable water with DULCOTROL – the compact measuring and control system specially designed for the treatment of potable water and applications in 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

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.

Metering systems for swimming pool water treatment

The metering systems DULCODOS are the result of years of application-based development work 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 Basic

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

- For swimming pools with a circulation capacity of up to 200 m^3/h

Metering system DULCODOS Pool Comfort

The chlorine metering system 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.

- For swimming pools with a circulation capacity of up to 225 m^3/h

Metering system DULCODOS Pool Professional

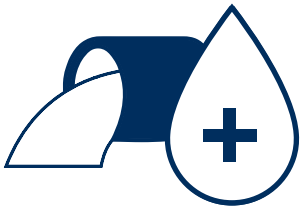
Chlorine metering system for individual adjustment and monitoring of all common hygiene auxiliary parameters in public pools. DULCODOS Pool Professional ensures crystal-clear water quality and cuts operating costs thanks to Eco!Mode.

- For swimming pools with a circulation capacity of up to 350 m^3/h

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 m^3



Water treatment and disinfection

Research and development in all standard technologies is 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.

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 LP

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

- Flow up to 523 m³/h

UV system DULCODES LP certified

The DULCODES LP for potable water disinfection, comprehensively certified to internationally-recognised DVGW / ÖVGW / SVGW / UVDGM standards. Adopting a pioneering approach, the systems have already been type-tested in line with the very latest DIN 19294-1:2020-08 test basis. This confirms the precise 50-100% control range of the highly efficient VARIO Flux lamps with dynamic lamp heating.

- Flow up to 406 m³/h

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 168 m³/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 m³/h

DULCONNEX

UV system DULCODES MP

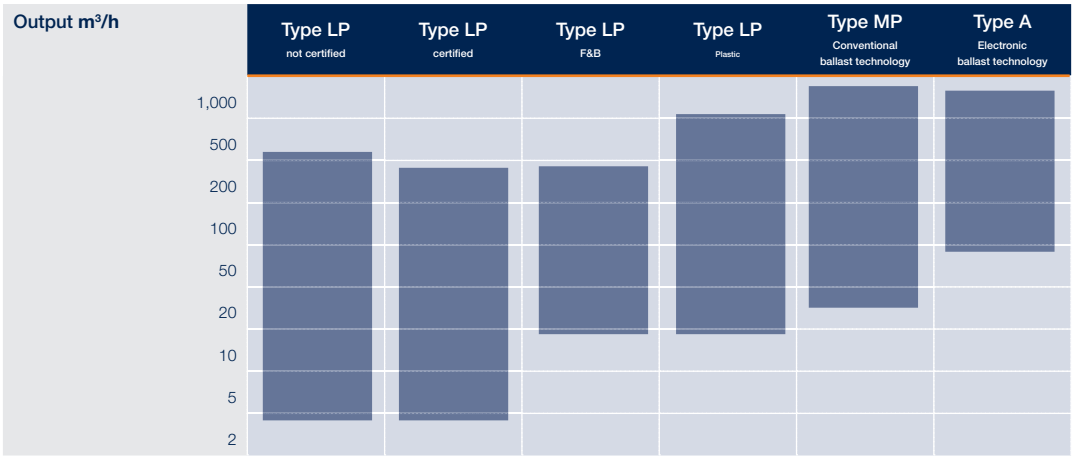
DULCODES MP for the efficient decomposition of combined chlorine in swimming pools. The typical odour associated with swimming pools is eliminated and the eyes, nose and skin are no longer irritated. Apart from improving the water quality, the low investment costs and high fresh water and energy consumption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

- Flow up to 853 m³/h

UV system DULCODES A

The UV system Dulcodes A helps to ensure water quality. The UV system works energy-efficiently and cleanly 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 809 m³/h



Applications	Type LP not certified	Type LP certified	Type LP F&B	Type LP Plastic	Type MP Conventional ballast technology	Type A Electronic ballast technology
Potable water	■	■				■
Process water	■	■		■	■	■
Swimming pool water	■			■	■	■
Salt water				■		
Food and beverage industry			■			

Performance overview of UV systems

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.

Ozone systems

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 as well as 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 output: 10 – 70 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.

- Ozone output: 20 – 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 420 g/h of ozone from compressed air.

- Ozone output: 70 – 420 g ozone/h

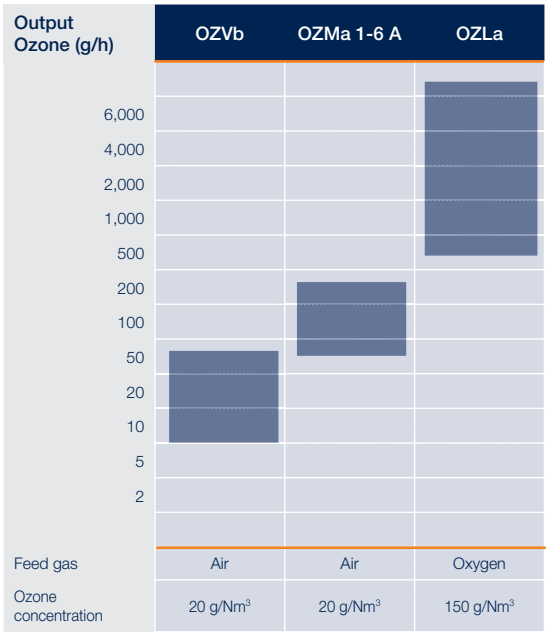
Ozone system DULCOZON OZLa

DULCOZON OZLa is a high-output ozone generator with a very compact design and low life cycle costs. It combines a high ozone concentration with unbeatable efficiency.

- Ozone output: 380- 6080 g ozone/h

Performance overview of ozone systems

The feed gas and the desired ozone concentration are key here.
In this performance overview you can find out which ozone system is best suited to your purposes.



Chlorine dioxide systems

Chlorine dioxide is an exceptionally reactive gas, which cannot stored due to its instability, but rather should only be manufactured in special systems to meet requirements at its place of use. It disinfects regardless of pH and has a very good sustained-release effect. Chlorine dioxide can even be used to treat entire water systems against legionella because it reliably breaks down biofilms in pipework and tanks and remains active in the pipes from many hours to several days.

DULCONNEX

Chlorine dioxide system Bello Zon CDLb

Chlorine dioxide system for production of a chlorine-free chlorine dioxide solution, 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 m^3/h

Chlorine dioxide system Bello Zon CDLb H_2SO_4

Bello Zon CDLb H_2SO_4 for the production of low chloride chlorine dioxide, especially for corrosion critical applications. With the chlorine dioxide system, ClO_2 is produced discontinuously following the acid/chlorite process.

- 8 – 89 g/h chlorine dioxide generation

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

Flexible solution for the production and metering of ClO_2 adapted to your tasks, requirements and price expectations. Made-to-measure systems constructed from modules designed to work perfectly 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.

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 m^3/h

Chlorine dioxide system Bello Zon CDVd

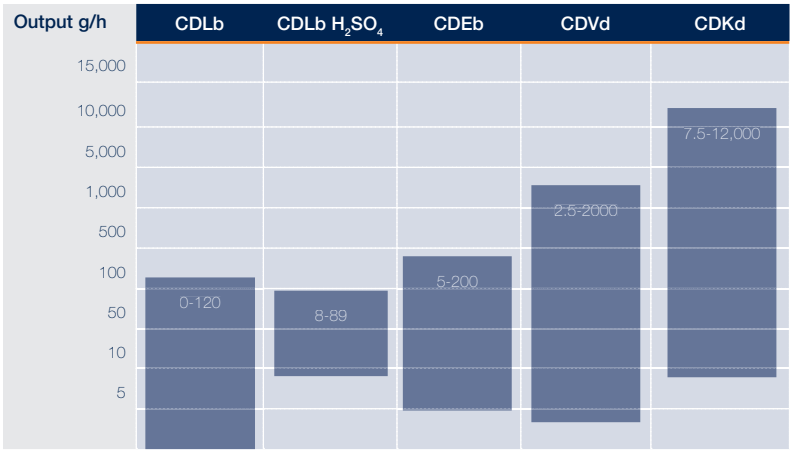
Chlorine dioxide system for the metering of chlorine dioxide with diluted starting chemicals. The certified output guarantees efficient chlorine dioxide production. The proven three-stage safety concept protects people and the environment.

- 2.5 – 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 m^3/h

Chlorine dioxide system Bello Zon CDKd

Chlorine dioxide system for the metering of chlorine dioxide with concentrated starting chemicals. The certified output guarantees efficient chlorine dioxide production. Bello Zon CDKd can be easily and safely integrated into any water treatment process.

- 7.5 – 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 m^3/h



Applications	CDLb	CDLb H_2SO_4	CDEb	CDVd	CDKd
Combating legionella	■				
Food and beverage industry	■	■	■	■	
Municipal potable water and waste water treatment	■		■	■	■
Industry (cooling tower waste water / process water etc.)	■	■	■	■	■

Performance overview of 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.

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 solution.

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 the tubular cell electrolysis system for in situ production of large quantities of hypochlorite. It impresses over with its ease of operation and outstanding efficiency combined with optimum process stability for the reliable disinfection of large volumetric flows.

- Output of 5 – 45 kg/h

Electrolysis system CHLORINSITU III

Need 100 – 10,000 g/h of sodium hypochlorite that is high-purity or low-chloride and low-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

Electrolysis system CHLORINSITU III Compact

Generation of sodium hypochlorite in smaller amounts for smaller swimming pools.

- Output of 25 – 50 g/h

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

Electrolysis systems of the CHLORINSITU V type generate ultra-pure chlorine gas on site from just salt, water and electricity. The system is particularly well suited to the disinfection of potable water, waste water, process water and water in swimming pools and cooling towers.

- Output of 100 – 3,500 g/h

Electrolysis system CHLORINSITU V Plus

CHLORINSITU V Plus generates ultra-pure chlorine gas on site from salt, water and electricity. It is particularly well suited to the disinfection of potable water, waste water, process water and water in swimming pools and cooling towers. Surplus chlorine gas is bound to the sodium hydroxide solution produced and stored as sodium hypochlorite. Demand peaks are covered by the additional dosing of sodium hypochlorite from the temporary storage.

- Output of 100 – 3,500 g/h

Electrolysis system DULCOLYSE

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. Ideal for particularly sensitive applications in the food and beverage industry.

- Output of up to 300 m^3/h water disinfection with minimal concentration of by-products

Performance overview of chlorine 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. We will find a solution together.

Output g/h	CHLORINSITU IIa	CHLORINSITU XL	CHLORINSITU III	CHLORINSITU V	CHLORINSITU V Plus
40,000					
30,000					
20,000					
10,000					
9,000					
8,000					
7,000					
6,000					
5,000					
4,000					
3,000					
2,000					
1,000					
Production of HOCl				■	■
Production of NaOCl	■	■	■		■
Applications					
Potable water	■	■	■	■	■
Waste water	■	■	■	■	■
Process water	■	■	■	■	■
Swimming pool water	■	■	■	■	■
Cooling tower			■	■	■

Output g/h	DULCOLYSE	CHLORINSITU III & IV compact
400		
300		
200		
100		
Production of HOCl		
Production of NaOCl	■	■
Applications		
Food and beverage industry	■	
Potable water		■
Cooling towers		■
Swimming pool		■

Metering systems for polymers

The elimination of solids from liquids requires the use of liquid or powder polymers. This is achieved using polymer preparation and metering systems. The experts in waste water treatment at ProMinent understand how to provide the efficient technology to implement this specialist application. Our metering systems were developed for the most stringent requirements, and are also especially easy to assemble and operate.

Metering system ULTROMAT ULFa (continuous flow system)

The polymer preparation system ULTROMAT ULFa (continuous flow system) enables the batching of 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 (pendulum system)

The metering system ULTROMAT ULPa (pendulum system) is ideal for preparing 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 DULCODOS ULIa (inline system liquid)

The polymer preparation system DULCODOS 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: 100 - 400 l/h

Metering and emptying station

DULCODOS SAFE-IBC is a special metering and emptying station for Intermediate Bulk Containers (IBC) with almost complete residual drainage.

Metering system ULTROMAT MT for batches

The manual polymer preparation system ULTROMAT MT is suitable for processing liquid and powdered polymers in small quantities, and is very robust and cost-effective.

- Capacity range: 120 – 3,800 l/h

Metering and emptying station DULCODOS SAFE-IBC

DULCODOS SAFE-IBC offers secure installation of an IBC on a special roll-under retaining tank construction. Any drops are reliably collected and cannot escape at the installation site.

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

Thanks to uninterrupted metering in processes, the metering and emptying station DULCODOS SAFE-IBC 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).

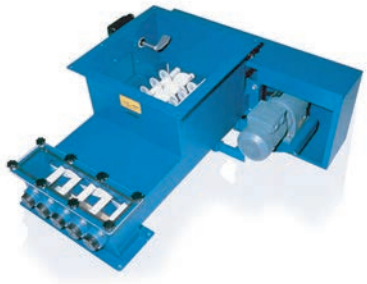
Metering systems for solids

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.

- Capacity range 0.4 – 215 m^3/h

Membrane filtration systems

ProMinent is an expert in membrane filtration and supplies a wide range of high-quality plant engineering. Combined with the extensive ProMinent product range, 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 uses membrane technology to reliably and safely remove turbidity, particles and microbiological contamination.

- 8 – 75 m^3/h filtrate output

Nanofiltration system Dulcosmose 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 m^3/h, higher outputs possible on request

Reverse osmosis system Dulcosmose 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 m^3/h

Reverse osmosis system Dulcosmose BW product range

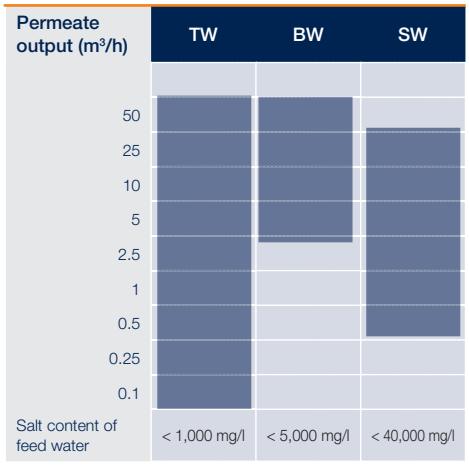
Reverse osmosis system Dulcosmose BW is the standard model for the modern desalination of brackish water. Equipped with the latest generation of "high rejection low-pressure" diaphragms, this system achieves maximum permeate output with moderate operating pressures, thereby lowering investment and operating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

- Permeate output 2,000 – 50,000 l/h

Reverse osmosis system Dulcosmose SW product range

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

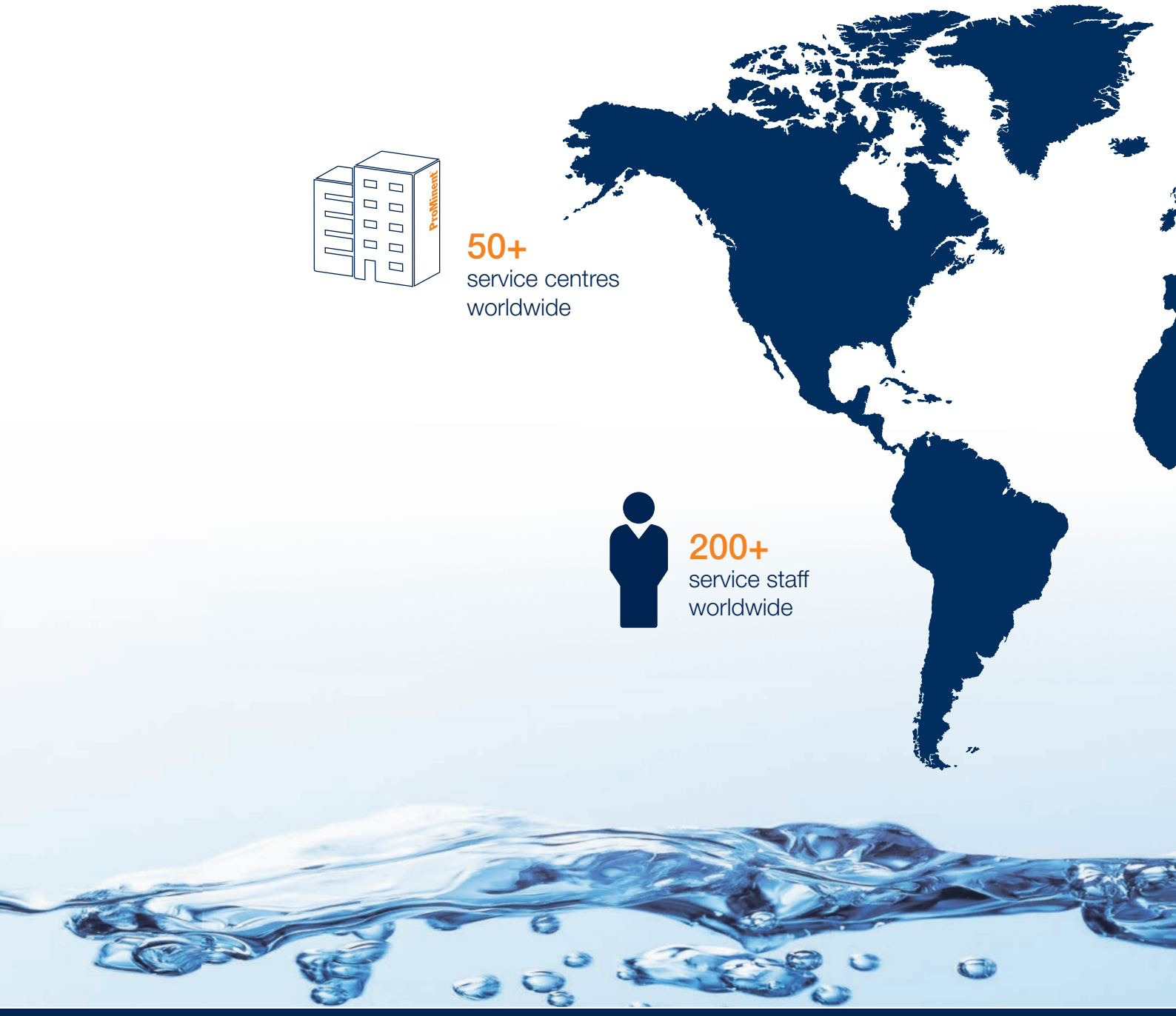
Explanation of abbreviations: TW: potable water, BW: brackish water, SW: seawater. Simply select your required performance level – and get advice from our ProMinent specialists.

Customer services

ProMinent provides an expert full-service for all products, solutions and systems. Our experts will help you with everything from commissioning, maintenance and repairs to technical product and process advice.

Our experts work tirelessly to improve our services in order to provide rapid and targeted assistance. No matter whether you want assistance on-site at your system, by phone, e-mail or remotely via the new ProMinent Smart-Support – we will quickly and expertly help you find the right solution.

And all this according to the principle of Customer services – unlimited. Ready for you – any time. Anywhere.



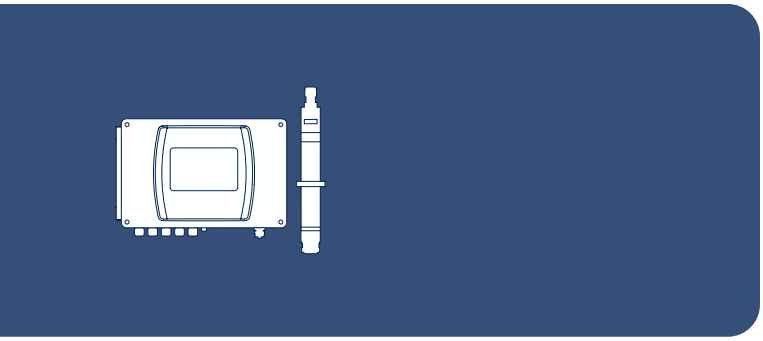
"You will receive the right service for every ProMinent product."

40+
service staff
throughout Germany

20+
different
services

CUSTOMER SERVICE – UNLIMITED


Start up
Installation
Individual setup
Commissioning
Ready-to-use system
Training
Competent instruction
Inspection
Regular checks
Maintenance
Reliable processes
Tailored service
Service agreements
Spare parts service
Continuous performance
Support hotline
Rapid support
Ongoing operation
ce for
YOU



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

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