ProMinent®

2018 product guide

Products for chemical fluid handling,
water treatment and water disinfection

Smart
Disinfection

Inventive, progressive and global

Contents

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 12 production sites worldwide, including Heidelberg, guaranteeing outstanding levels of quality for our customers and ensuring our independence from fluctuations in supplier markets.

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 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.

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 2,400 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.

▶ www.prominent.com   ▶ www.prominent.com

The all-rounders:
metering pumps and metering systems

How do metering pumps work?

Most metering pumps are oscillating displacement 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.

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: low-pressure metering pumps

Solenoid-driven metering pumps are available in capacities ranging from 0.74 to 75 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.

Motor-driven metering pump alpha

The motor-driven metering Pump alpha is the metering pump for liquid media and the optimum solution for simple applications. Robust, low-noise, chemical-resistant, with precise metering and good suction capacity.

- Capacity range: 1 – 30.6 l/h, 10 – 2 bar

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, overload-proof, adaptable to signal transducers fitted.

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

Precision plunger metering pump mikro delta®

The precision plunger metering pump mikro delta® meters safely, ultra-accurately and constantly in the microlitre range – one of the latest generation of solenoid metering pumps. Higher pressures can be achieved thanks to half the stroke length and double the stroke rate compared to the previous model.

- Capacity range: 150 – 1,500 ml/h, 60 – 20 bar

Pneumatic metering pump Pneumados

The metering pump Pneumados has a pneumatic power end and can be used in places without electrical supply voltage, with suction stroke performed by spring force.

- Capacity range: 0.76 – 16.7 l/h, 16 – 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 delta®

A high-end diaphragm metering pump: The solenoid-driven metering pump delta® is the first of its kind to have a regulated solenoid drive. Virtually wear-free, extremely economical and with a self-bleeding dosing head design.

- Capacity range: 7.5 – 75 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 between 0.03 – 10 ml/stroke

Overview: storage tanks, transfer and peristaltic pumps

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. All it takes is a few clicks to find a selection of suitable models. www.pump-guide.com.
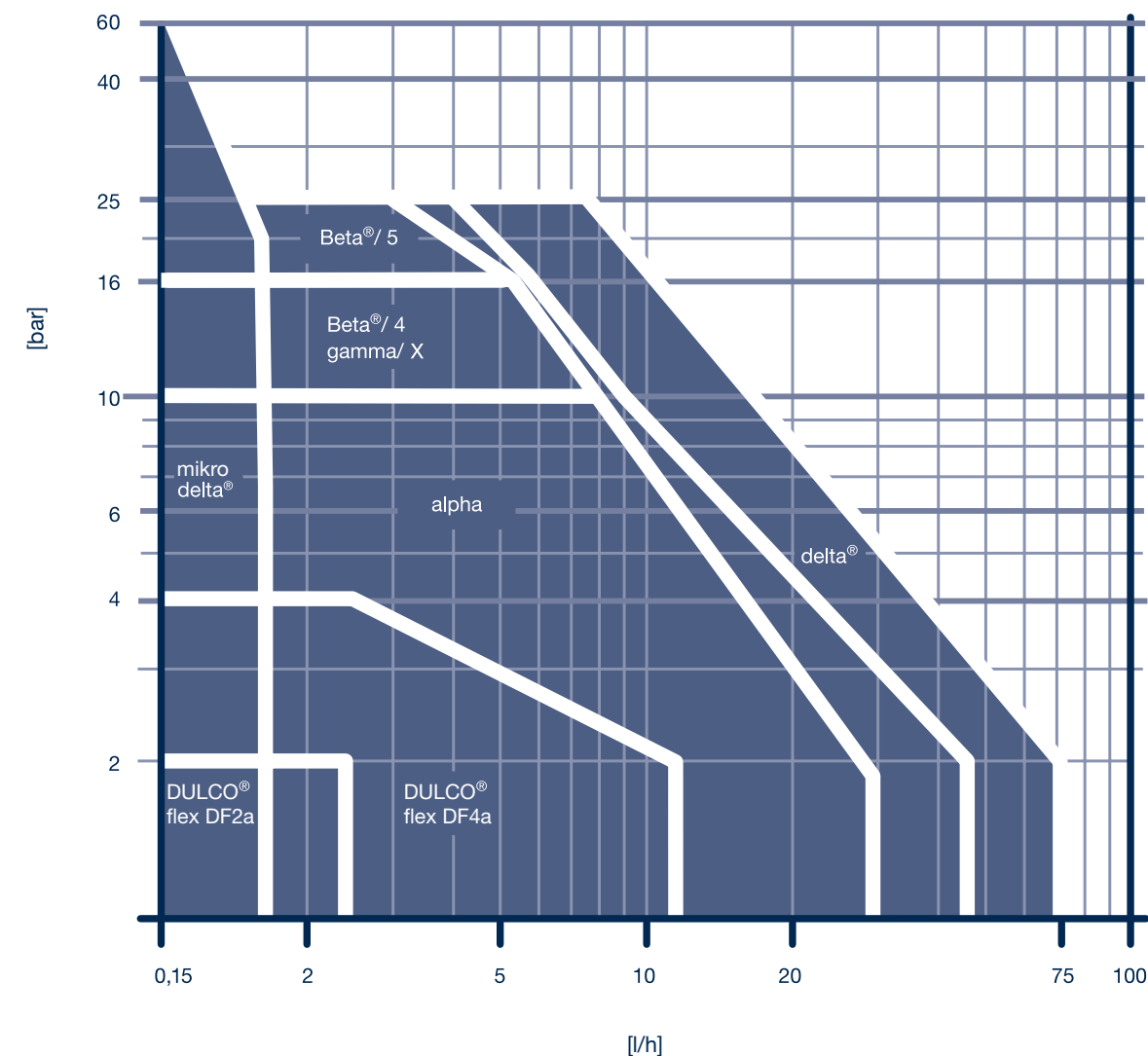
Storage tanks

ProMinent also offers standard tanks for chemical storage and transfer. However, if you have specific requirements ProMinent can also supply storage 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 nearly every possible pump capacity.

Dosing tanks and collecting pans

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

- Useful capacity of 35 – 1,500 l

Chart axes: [bar] (vertical), [l/h] (horizontal)

Vertical axis values: 60, 40, 25, 16, 10, 6, 4, 2
Horizontal axis values: 0,15, 2, 5, 10, 20, 75, 100

Pump types labelled: Beta®/ 5, Beta®/ 4 gamma/ X, mikro delta®, alpha, delta®, DULCO® flex DF2a, DULCO® flex DF4a

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 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 diluted 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

Rotary lobe pump ROTADOS

The compact rotary lobe pump pumps viscous and even abrasive media at up to 100 m³/h and also offers 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

Air-operated diaphragm pump Duodos

Air-operated diaphragm pump Duodos for pumping liquid media.

■ Capacity range up to 6,700 l/h, delivery height up to 70 mWs

Barrel pump DULCO®Trans

The area 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

Selection guide

ProMinent makes it easy to choose the right chemical transfer pump. Choose the pump capacity and the required 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

Peristaltic pumps DULCO®flex

Peristaltic pumps DULCO®are amongst the most adaptable pumps from ProMinent. They are suitable for an enormously 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 noiselessness 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 equipped with extra rollers and fabric-reinforced hoses for industrial use.

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

Overview: metering systems DULCODOS®

Selection guide

All you have to do is select the pump capacity and pressure, note the point where they intersect and the appropriate specialists at ProMinent will configure the right ProMinent peristaltic pump.

Type	Priming	Power end	Capacity range
Peristaltic pump DULCO®flex	Self-priming	Electrical	Up to 15,000 l/h, max. 15 bar
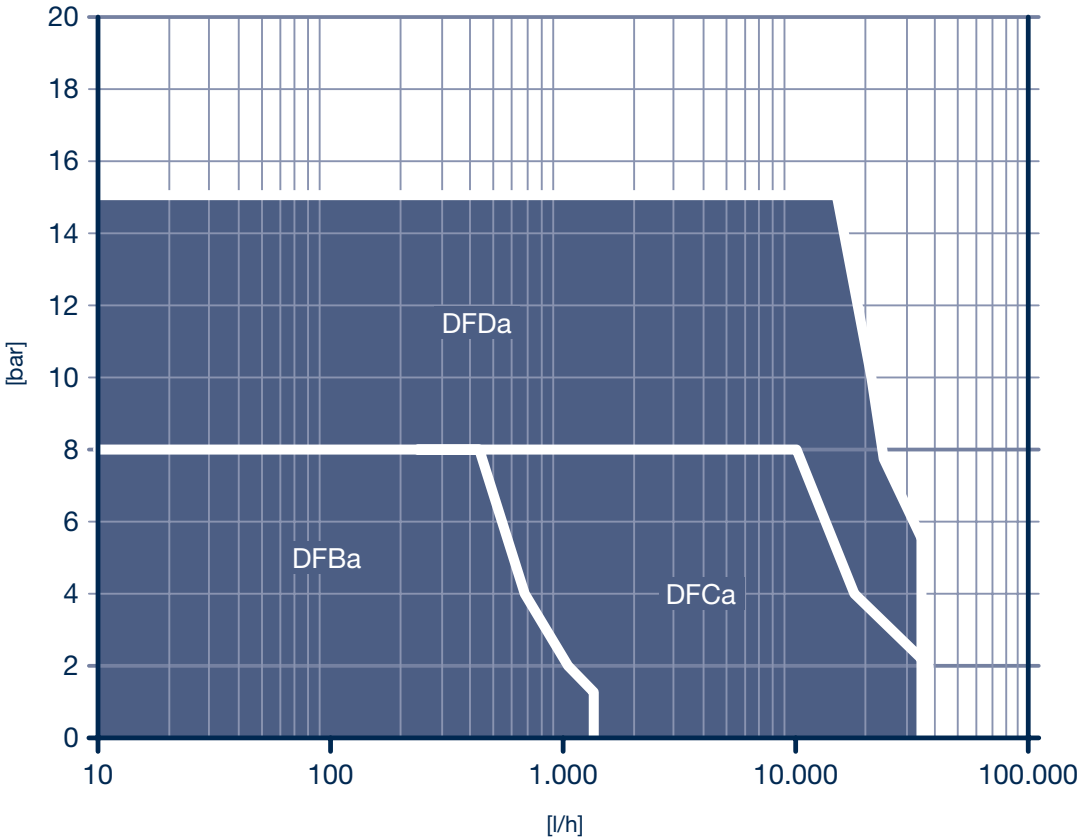
Metering systems DULCODOS®

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® eco

For storing and metering liquid chemicals. Use a selection system (identity code) to quickly and flexibly adapt your metering system to your metering task.

- Useful capacity: 35 – 1,000 l

Metering system DULCODOS® panel

Metering systems are immediately available and ready for use for the most important applications. Sensors, controller and metering pump together with the required storage tanks form a complete unit, which can start work without any installation effort on your part.

- Capacity of 0.74 – 1,000 l/h

Metering system DULCODOS® universal

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 – and can be supplied cost-effectively and extremely quickly thanks to the preconfigured modules.

- Pump volume according to selected pump 1 ml/h – 75 l/h, back pressure 10 – 2 bar

Selection guide
Metering systems DULCODOS®

ProMinent responds to individual needs. The standard metering systems DULCODOS® are available as metering systems with tanks or as panel-mounted metering systems – and can be individually configured according to requirements.

Type	Function	Applications	Capacity range
DULCODOS® eco	Storage, metering	General	35 – 1,000 l
DULCODOS® panel	Metering	General	0.74 – 1,000 l/h
DULCODOS® universal	Metering	General	1 ml/h - 75 l/h

Notes

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 continuous 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: sensor technology

Monitoring a limit value or building a closed control circuit is easy with our sensors – in an enormous range of measuring applications. The product family DULCOTEST® is application-based and ensures precise measuring 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 installed 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 type of 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 1 – 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 clear
		PHEK	Swimming pool, aquarium, 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 1 – 12	max. 80 °C / 6 bar	PHER	Cooling water, waste water
Solid matter, not transparent, pH 1 – 12	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 pool, aquarium, synthetic stem
	max. 80 °C / 6 bar	RHEP-Pt	Process water
		PHE-Au	Chemically contaminated water, e.g. CN^- Ozone treatment
Solid matter, turbid	max. 100°C / 16 bar	RHER	Cooling water, waste water
Solid matter, non-transparent	max. 80 °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.

NEW

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-CAN-xppm, CLE 3.1-CAN-xppm
Free chlorine	Potable water, swimming pool water, in-situ electrolysis (without diaphragm)	0.02 – 10 mg/l	D1C, DAC	CLO 1-mA-xppm
Free chlorine	Potable water, swimming pool water	0.1 – 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	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 3-µA-xppm
Free chlorine	Potable water, swimming pool water	0.05 – 5 mg/l	COMPACT	CLB 2-µA-xppm
Free chlorine	Cooling, process, waste water, water with higher pH values (stable); seawater (free chlorine exists as bromine)	0.01 – 10 mg/l	D1C, DAC	CBR 1-mA-xppm
Total available chlorine	Swimming pool water with chlororganic disinfectants	0.02 – 10 mg/l	D1C, DAC	CGE 3-mA-xppm
Total available chlorine	Swimming pool water with organic chlorine disinfectants, in situ electrolysis (without diaphragm)	0.02 – 10 mg/l	D1C, DAC	CGE 3-mA
Total available chlorine	Swimming pool water with organic chlorine disinfectants	0.01 – 10 mg/l	DULCOMARIN®	CGE 3-mA-xppm
Total chlorine	Potable, industrial, process and waste water	0.01 – 10 mg/l	D1C, DAC	CTE 1-mA-xppm
Total chlorine	Potable, industrial, process and waste water	0.01 – 10 mg/l	DMT	CTE 1-DMT-xppm
Total chlorine	Potable, industrial, process and waste water	0.01 – 10 mg/l	DULCOMARIN®	CTE 1-CAN-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-P-xppm
Total available bromine	Cooling water, waste water, swimming pool, whirlpool 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, whirl-pool water with organic or inorganic bromine compounds	0.02 – 10 mg/l	DULCOMARIN®	BRE 3-CAN-P-10ppm
Free and combined bromine	Cooling, process, waste water, water with higher pH values (stable); seawater	0.02 – 20 mg/l	D1C, DAC	CBR 1-mA-xppm
Free and combined bromine	Cooling, process, waste water, water with higher pH values (stable)	0.1 – 10 mg/l	D1C, DAC	CBR 1-CAN-P-10ppm
Chlorine dioxide	Potable water	0.01 – 10 mg/l	D1C, DAC	CDE 2-mA-xppm
Chlorine dioxide	Bottle washing system	0.02 – 2 mg/l	D1C, DAC	CDP 1-mA
Chlorine dioxide	Hot water up to 60 °C, cooling water, waste water, irrigation water	0.01 – 10 mg/l	D1C, DAC, DULCOMARIN®	CDR 1-mA-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, industrial or cooling water	0.02 – 2 mg/l	D1C, DAC	OZR 1-mA-2-xppm
Dissolved oxygen	Potable water, surface water	2 – 20 mg/l	D1C, DAC	DO 1-mA-xppm
Dissolved oxygen	Aeration tanks, clarification plants	0.1 – 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	PAA 1-mA-xppm
Hydrogen peroxide	Clear water, fast control	1 – 2,000 mg/l	DAC	Perox sensor, PEROX H2.10
Hydrogen peroxide	Process, 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: 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

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 or residue forming medium or chemically corrosive medium?			
Yes			No
Inductive conductivity measurement			Conductive conductivity measurement
Chemically corrosive medium Or temperatures > 70 °C Or measured value < 200 µS/cm Or > 1,000 mS/cm?			■ Measuring range ■ Temperature ■ Process matching ■ Electrical connection
Yes	No		Series LF, LMP, CK
Series ICT 2 Process flow: with stainless steel flange accessory immersion valves: with accessory IMA – ICT 2	Series ICT 5		
	Installation in process flow?		
	Yes	No	
	Type ICT 5	Type ICT 5-IMA	

Overview: 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.

NEW

NEW

Transmitter DULCOMETER® DULCOPAC

The transmitter DULCOMETER® DULCOPAC is a complete PID controller for the key measuring parameters in water treatment. It can be installed on a top hat rail inside a control cabinet.

Transmitter DULCOMETER® DMTa

The transmitter DULCOMETER® DMTa converts the sensor signals for 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® 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. The two 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

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.

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.

Controller DULCOMETER® Compact

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

Controller AEGIS II

Controller AEGIS II continuously measures and controls conductivity for treating cooling water in evaporator cooling water circuits. It controls the biocide concentration, thereby keeping pipework and heat exchangers clean.

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	■		■	■
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	■	■		

Function	DACb	Compact	D1Cb	D1Cc
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: panel-mounted measuring and control systems

Metering systems for swimming pool water treatment

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 from up to 2 simultaneously available measuring and control points with 13 different measuring parameters in different combinations. The benefit: as a complete plug-and-play module, these systems are quickly and easily installed and immediately ready for use. What more could you want?

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.

**Measuring and control systems
DULCOTROL® Drinking Water / F&B**

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

**Measuring and control systems
DULCOTROL® Waste Water**

Monitoring and treatment of waste water with the panel-mounted online measuring and control system. Easy, fool-proof configuration, no detailed technical knowledge required.

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 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 m³/h

All-rounders for all capacity ranges:
Motor-driven and process metering pumps

Zero compromise

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?

Overview: 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 pumps Sigma (Control type)

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 safety. It offers a wide range of power end designs, such as three-phase or 1-phase AC motors, even for Exe and Exde areas with ATEX certification.

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

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

The Sigma/ 1 Control can be used flexibly in a number of applications as a robust motor-driven metering pump. Excellent process safety and reliability is guaranteed with the patented multi-layer safety diaphragm. Highlights include features such as removable control unit, adjustable metering profiles and a variety of power end and control configurations.

- Capacity range: 17 – 117 l/h, 12 – 4 bar

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

The Sigma/ 2 Control is a robust motor-driven metering pump with a patented multi-layer safety diaphragm. The integrated overload shut-down offers further protection for the pump. A removable operating unit, adjustable metering profiles and a variety of power end and control configurations enable the versatile use of this pump.

- Capacity range: 61 – 353 l/h, 16 – 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 wide range of power end versions, even for Exe and Exde areas with ATEX certification.

- 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 safety and 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, even for Exe and Exde areas with ATEX certification.

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

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

The motor-driven metering pump Sigma/ 3 Control guarantees excellent process reliability, thanks to its patented multi-layer safety diaphragm. Intelligent features, such as removable operating unit and adjustable metering profiles, as well as a variety of power end and control configurations, enable the versatile use of this pump in a number of applications.

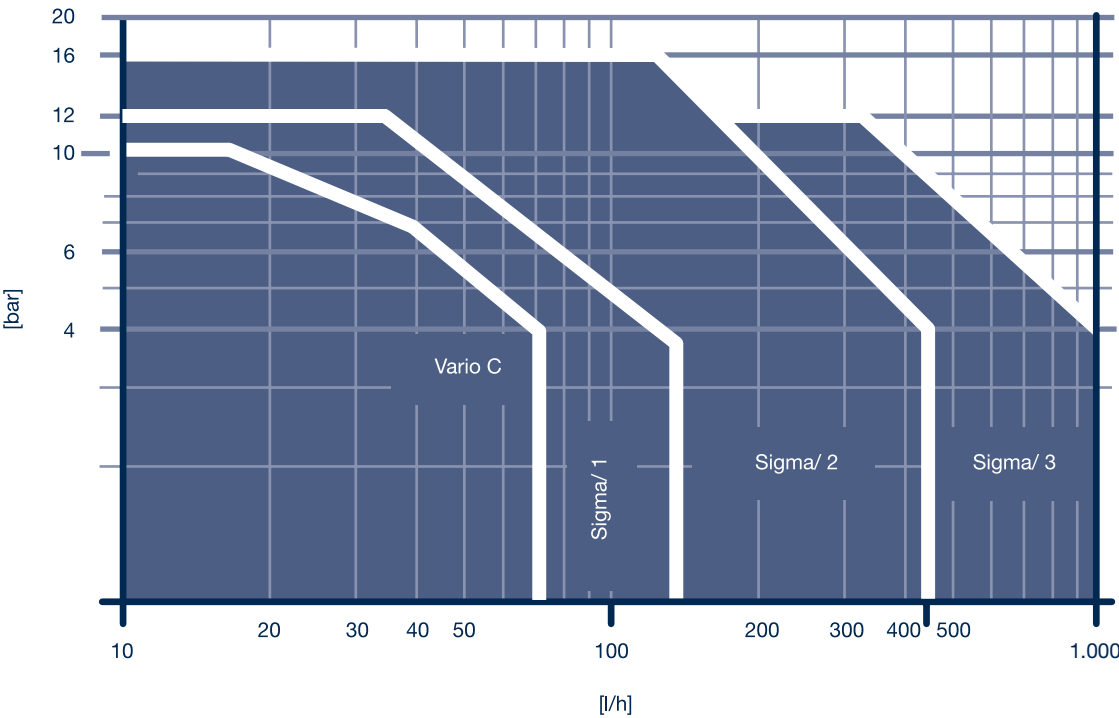- Capacity range: 182 – 1,040 l/h, 12 – 4 bar

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. All it takes is a few clicks to find a selection of suitable models. www.pump-guide.com.

Overview: 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?

Diaphragm process metering pump ProMinent EXtronic®

The diaphragm metering pump EXtronic® is perfectly suited for the sensitive use of liquid media in facilities with an explosive gas atmosphere as well as for mines at risk of firedamp, as it is approved in compliance with the EC EX Regulation 94/9/EC (ATEX).

- Capacity range: 0.19 – 60 l/h, 10 – 1.5 bar

Hydraulic diaphragm metering pump Hydro/ 2

As an extremely robust hydraulic diaphragm metering pump, the Hydro/ 2 meets the most exacting safety requirements. Its modular construction, with either one or two dosing heads, 4 gear ratios, 2 dosing head sizes and 3 dosing head materials, offers a very high degree of flexibility in terms of areas of application.

- Capacity range: 3 – 72 l/h, 100 – 25 bar

Hydraulic diaphragm metering pump Hydro/ 3

The Hydro/ 3 is an extremely robust hydraulic diaphragm metering pump. It meets the most exacting safety requirements. Its modular construction offers extremely good flexibility in terms of application, for example in the oil and gas industry.

- Capacity range: 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 is equipped as standard with a pressure relief valve and PTFE multi-layer diaphragm with diaphragm rupture warning system. Its modular construction offers extremely good flexibility in terms of areas of application.

- Capacity range: 130 – 1,450 l/h, 25 – 7 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. It is therefore 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

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, giving it versatile uses. 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

Diaphragm, hydraulic diaphragm, plunger metering pumps Makro TZ

This metering pump series has a modular design and offers an application-matched solution for every use.

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

Diaphragm, hydraulic diaphragm, plunger metering pumps Makro/ 5

Likewise modularly expandable, Makro/ 5 is another product range available with diaphragm, hydraulic diaphragm or plunger metering pumps, which is used for higher capacity ranges.

■ Capacity range M5Ma (mech. deflected diaphragm pump): 1,540 – 4,000 l/h, 4 bar
■ Capacity range M5Ha (hydr. deflected diaphragm pump): 450 – 6,108 l/h, 25 – 6 bar
■ Capacity range M5Ka (plunger metering pump): 38 – 6,014 l/h, 320 – 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 therefore a versatile range of uses. A range of power end versions are therefore 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 thus versatile uses.

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

Hydraulic diaphragm metering pump Orlita® Evolution 1

The Orlita® Evolution 1 meets the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control.

■ Capacity range: 3 – 511 l/h, 400 – 8 bar

Hydraulic diaphragm metering pump Orlita® Evolution 2

The Orlita® Evolution 2 meets the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control.

■ Capacity range: 6 – 900 l/h, 400 – 10 bar

Hydraulic diaphragm metering pump Orlita® Evolution 3

As an extremely robust hydraulic diaphragm metering pump, the Orlita® Evolution 3 meets the most exacting safety requirements. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control.

- Capacity range: 47 – 1,335 l/h, 520 – 18 bar

Hydraulic diaphragm metering pump Orlita® Evolution 4

The Orlita® Evolution 4 meets the most exacting safety requirements as an extremely robust hydraulic diaphragm metering pump. It stands out thanks to its PTFE multi-layer diaphragm with integral diaphragm rupture warning system and unique diaphragm position control.

- Capacity range: 15 – 7,352 l/h, 400 – 10 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. All it takes is a few clicks to find a selection of suitable models. www.pump-guide.com

Process diaphragm metering pump Zentriplex

As an oscillating triplex process diaphragm metering pump, the Zentriplex guarantees excellent performance and provides outstanding efficiency with an extremely small footprint thanks to the space-saving arrangement of the pump and drive unit. It also stands out on account of its efficiency, as minimal material and labour are required.
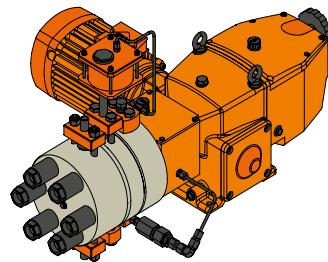
- Capacity range: 424 – 8,000 l/h, 367 – 36 bar

Plunger metering pump Orlita® Evolution 1+2

NEW

The Orlita® Evolution plunger metering pumps EP1a and EP2a form an integrated product range with stroke lengths of 15 to 40 mm. This covers the capacity range from 3 to 7,400 l/h at 400 – 10 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: 5 – 511 l/h, 520 – 8 bar

Disinfection systems and oxidation systems

Research and development in all standard technologies is well worth the effort, because in the treatment of hygienically pure water, the products and systems are state-of-the-art.

Developing solutions, providing support

Starting from the huge range of available products, ProMinent experts assemble exactly 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.

► www.prominent.com ► www.prominent.com

Overview: 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 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 739 m³/h

UV system Dulcodes MP

The UV system Dulcodes MP for water treatment and disinfection in swimming pools. Combined chlorine is broken down and the typical swimming pool odour is eliminated: no more irritation for eyes, nose and skin. A manual stage switch permits adaptation to the capacity requirement.

- Flow up to 569 m³/h

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

UV system Dulcodes LP

The unique UV systems Dulcodes LP are synonymous with pioneering water treatment – efficient and free of chemicals. Maximum flow output with fewer lamps and minimum energy consumption leads to lower life cycle costs.

- Flow up to 523 m³/h

UV systems Dulcodes LP-PE (Plastic)

Disinfect saline sea water 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

	Type LP Stainless steel uncertified	Type LP Stainless steel certified	Type LP Plastic chamber	Type MP Conventional ballast technology	Type A Electronic ballast technology
Output [m³/h] 1.000					
500					
400 J/m², 98%/cm Transmission 200					
100					
50					
20					
10					
5					
2					
Application					
Drinking water	■	■			■
Industrial water	■	■	■	■	■
Swimming pool water	■		■	■	■
Salt water			■		

Performance overview: UV systems

Which type are 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: 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® OZVa

OZONFILT® OZVa is high-performance and compact. For efficient ozone generation in the medium output range of up to 90 g/h from compressed air or oxygen.

- Capacity range: 5 – 90 g ozone/h

Ozone system OZONFILT® OZMa

OZONFILT® OZMa represents maximum operational safety with 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 OMVa

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

- Capacity range: 5 – 70 g ozone/h

Performance overview: ozone systems

The operating gas and the desired ozone concentration are the factors that count. Refer to the performance overview below to find out which ozone system is best suited to your purposes.

Output [g ozone/h]	OZVa 1-4	OZVa 5-7	OZMa 1-6 A	OZMa 1-6 O
1.000				
500				
200				
100				
50				
20				
10				
5				
2				
Operating gas	Air	Oxygen	Air	Oxygen
Ozone concentration	20 g/Nm³	100 g/Nm³	20 g/Nm³	100 g/Nm³

Overview: 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 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 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® CDVc

Chlorine dioxide system for monitoring and metering chlorine dioxide and diluted chemicals. Maximum output and safety from special reactor concept. Bello Zon® CDVc can be easily and safely integrated into any water treatment process.

- 1 – 2,000 g/h chlorine dioxide. Max. flow at 0.2 ppm ClO_2 metering is 10,000 m^3/h

Chlorine dioxide system Bello Zon® CDKc

Chlorine dioxide system for continuous production, metering and monitoring of chlorine dioxide with concentrated chemicals. Bello Zon® CDKc is a ready-to-use convenient system with integrated intrinsically safe pre-dilution station

- 8 – 12,000 g/h chlorine dioxide. Max. flow at 0.2 ppm ClO_2 metering is 60,000 m^3/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 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® 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 possible 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	CDEb	CDVc	CDKc
15,000				
10,000				8 – 12.000
5,000				
1,000			1 – 2.000	
500				
100	0 – 120	5 – 200		
50				
10				
5				

Manufacturing Method

	Chlorite-Acid (depleted) 7,5 % NaCLo2 + 9 % HCl	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

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

▶ www.prominent.com

▶ www.prominent.com

Overview: 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.

NEW

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 30 – 300 g/h sodium hypochlorite

Electrolysis system CHLORINSITU® II

CHLORINSITU® II 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 50 – 2,400 g/h sodium hypochlorite

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 ultra-pure chlorine

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 ultra-pure chlorine

Diaphragm electrolysis system CHLORINSITU® III

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

■ Output of 100 – 10,000 g/h sodium hypochlorite

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 sodium hypochlorite

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 from a single system.

■ Output of 100 – 3,500 g/h ultra-pure chlorine

Electrolysis system Dulco®Lyse

Efficient production of DulcoLyt 400 (ECA water) 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 ultra-pure hypochlorous acid

Overview: chlorine gas metering system DULCO®Vaq
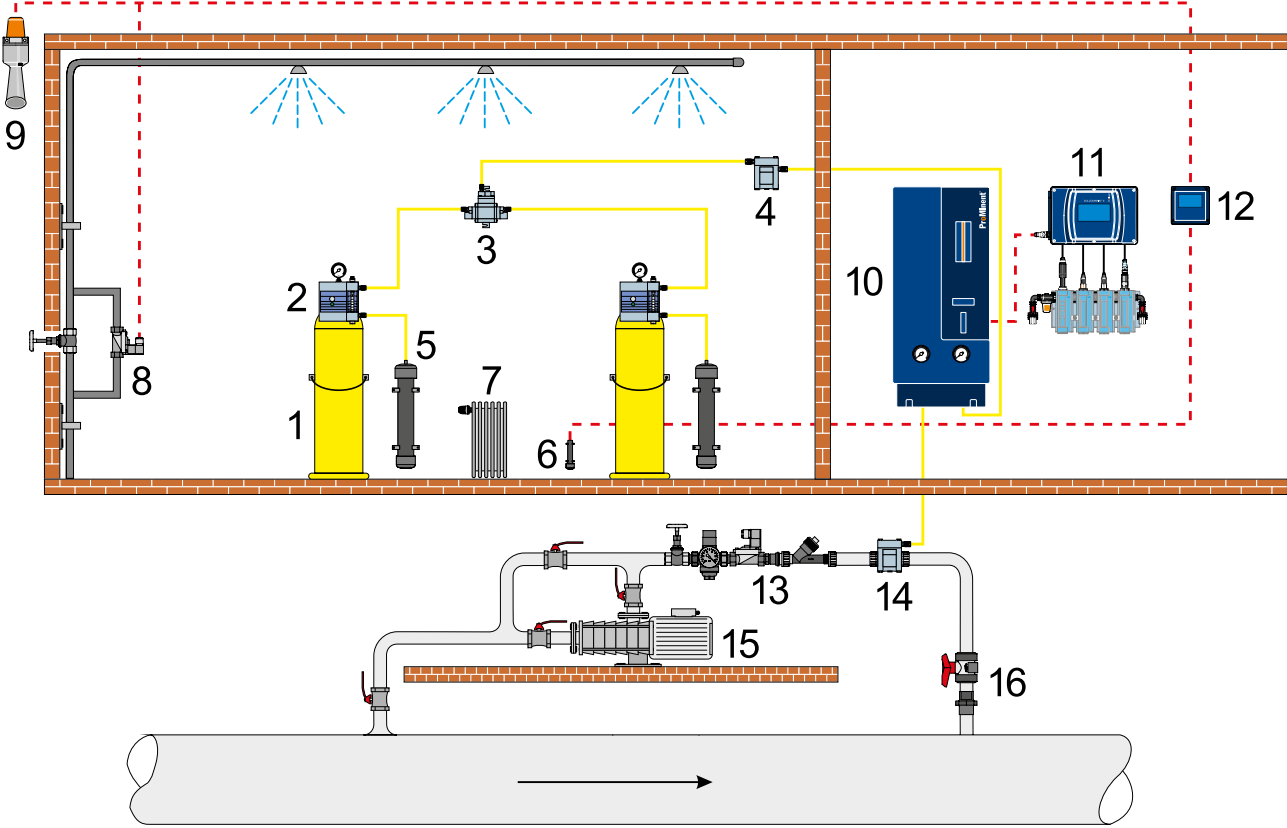
Performance overview: electrolysis systems

We offer a range of solutions for potable, process and swimming pool water. You can find various application combinations in the table. 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.

In the metering system DULCO®Vaq, chlorine gas is safely handled under a vacuum. The vacuum 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 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.

Output [g/h]	CHLORINSITU® II	CHLORINSITU® III	CHLORINSITU® V	CHLORINSITU® V Plus
10.000			Higher capacity ratings available on request	Higher capacity ratings available on request
9.000				
8.000				
7.000				
6.000				
5.000				
4.000				
3.000				
2.000				
1.000				
Production of HOCl			■	■
Production of NaOCl	■	■		■

Application

	CHLORINSITU® II	CHLORINSITU® III	CHLORINSITU® V	CHLORINSITU® V Plus
Drinking water	■	■	■	■
Waste water	■	■	■	■
Process water	■	■	■	■
Swimming pool water	■	■	■	■
Cooling towers		■	■	■

Output [g/h]	DULCOLYSE	CHLORINSITU® III & IV compact	CHLORINSITU® IIa
400			
300			
200			
100			

Application

	DULCOLYSE	CHLORINSITU® III & IV compact	CHLORINSITU® IIa
Food and beverage industries	■		
Potable water		■	■
Cooling towers		■	
Swimming pool		■	■
Animal and plant breeding			■

1 Chlorine gas bottle	2 Vacuum metering controller	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 set	14 Injector	15 Booster pump
16 Injection point monitoring		

Overview: 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 station 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 from 400 – 4,000 l/h

Metering system POLYMORE

The metering system POLYMORE is the inline batching station in which the liquid polymer is introduced into the pressure-encapsulated multi-zone mixing equipment through a peristaltic pump. The result is a prepared and homogeneous polymer solution.

■ Capacity range: up to 18,000 l/h

Metering system PolyRex

The metering system PolyRex is a double-deck 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 3,820 l/h

Double-deck system Ultromat® ULDa

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 batch operation

Manual polymer batching station 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

Storage tanks

ProMinent storage tanks all meet the requirements of the German Water Management Act (WHG), the Directive on Systems for Handling Substances Harmful to Water (VAwS) and the Approval Marks Ordinance. They also comply with the strict legal requirements governing the construction and operation of systems in which substances hazardous to the environment are stored and transported.

Storage tanks

Our PE storage tanks satisfy the strict requirements of the German Water Management Act (WHG). They are suitable for indoor and outdoor installation. If required our tanks can be constructed in compliance with international manufacturing approvals such as KVU, VLAREM or KIWA.

■ Useful capacity up to max. 1,500 l

Metering systems for solids

ProMinent supplies everything you need for metering and treating solids in your production process. We have cost-effective solutions even 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 design makes the multi-screw feeder ideally suited for metering powders and granulates.

Selection guide for metering systems Ultromat®

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

Overview: membrane filtration systems

ProMinent is an expert in membrane filtration and supplies a wide range of high-quality system technology. 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® NF product range

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® 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" membranes, 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 sea water. Equipped with the latest generation of "high rejection low-pressure" membranes, this system achieves maximum permeate output with moderate operating pressures, thereby lowering investment and operating costs.

- Permeate output 780 – 29,000 l/h

Reverse osmosis system Dulcosmose® ecoPRO

Reverse osmosis system Dulcosmose® ecoPRO ensures low investment and operating costs with maximum permeate output at low operating pressures.

- Permeate output 100 – 2,700 l/h

Reverse osmosis system Dulcosmose® TW product range

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 of 3 – 50 m³/h

Performance overview: reverse osmosis

ecoPro is the standard system for potable water treatment, 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	ecoPRO	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	< 1.000 mg/l	< 5.000 mg/l	< 40.000 mg/l

Notes

ProMinent®

ProMinent: the 2018 range

Order your personal copy of the ProMinent 2018 product catalogue.

You have the application, we have the solution.
Our product catalogue is available in four individual volumes to help you quickly find what you are looking for. So that you can conveniently order your personal individual catalogue volume we offer a number of different ordering options.

Volume 1
Metering pumps, components and metering systems

Volume 2
Measuring, control and sensor technology

Volume 3
Motor-driven and process metering pumps for all capacity ranges

Volume 4
Water treatment and water disinfection

Available on the **App Store**

You can find the ProMinent app for iPhones and iPads in the iTunes App Store or at www.prominent.com/app.

You can find individual catalogues for downloading or for online browsing at www.prominent.com/en/product-catalogue.

Or request your personal printed copy directly from us at www.prominent.com/en/catalogue-request.

You can also order your copy by fax on +49 6221 842-215.

ProMinent GmbH

info@prominent.com
www.prominent.com