

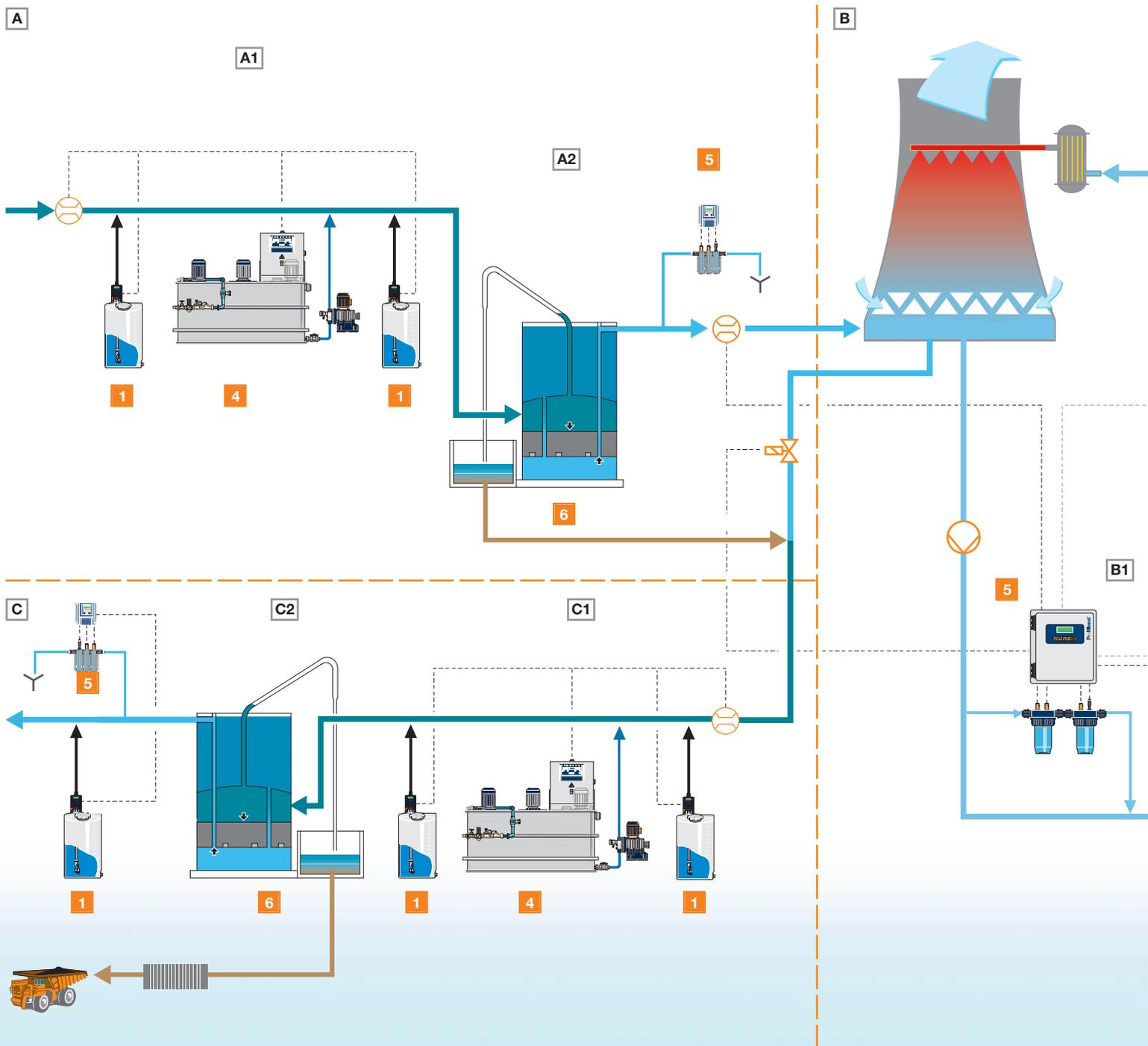
# Making the most of cooling water

Complete solutions for the treatment of cooling water

Printed in Germany, PT PM 088 04/09 GB



- A** Make-up water treatment
- A1** Flocculation
- A2** Filtration
- B** Circulation water treatment
- B1** Bleed control, pH-value and biocide measuring
- B2** Disinfection
- B3** Disinfection option 1
- B4** Disinfection option 2
- B5** Disperser/hardness stabiliser metering
- C** Process water treatment
- C1** Flocculation
- C2** Filtration



**1** ProMinent® metering station

**2** Chlorine dioxide plant Bello Zon®

**3** Ozone plant Bono Zon®

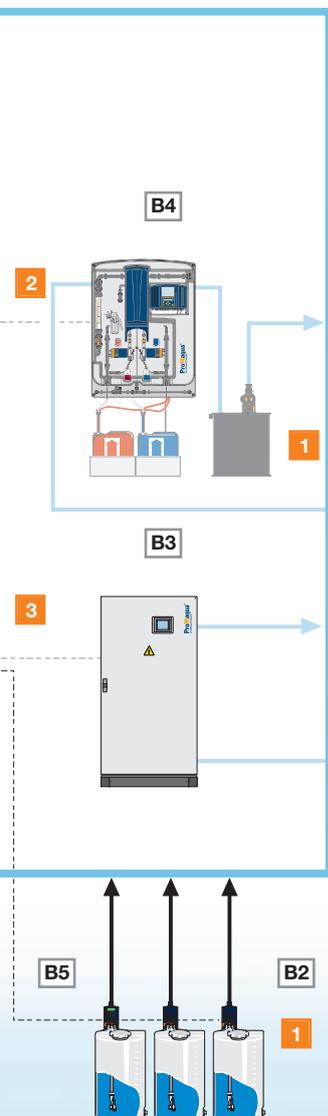
**4** Polyelectrolyte preparation and metering system ULTROMAT®

**5** Measurement and control technology DULCOMETER®/DULCOTEST®/ProMcon/MultiFlex

**6** Gravity filter INTERFILT® SK

# Optimum treatment of cooling water

Cooling circuits are used in a range of industries throughout the world. Circulatory cooling is often used as an alternative to cooling with fresh water. In cases such as these, the use of ProMinent technology helps to minimise the consumption of cooling water and also protects the entire system from corrosion, sediments and the growth of biological organisms. Negative effects on the environment and the build-up of legionella are further prime concerns. In circulatory cooling systems, losses through evaporation and leakage must be topped up with make-up water. To compensate for the resulting increase in salt concentration, bleed takes place, initiated by measurement of electrolytic conductivity. This prevents scaling and corrosion. The make-up water is also chemically conditioned.



ProMinent has many years of experience and a comprehensive range of products for all cooling water treatment processes.

## Disinfection

- Metering systems for the metering of sodium hypochlorite or bromide products
- Use of ozone plants
- Use of chloride dioxide plants
- Measurement and control technology for variable-dependent metering of biocides

## Dispersion

- Metering systems for the metering of dispersant chemicals

## Corrosion protection

- Metering systems for the metering of corrosion protection agents and hardness stabilisers
- Metering systems for the metering of dispersant chemicals

## Bleed control

- Specially adapted units for measurement and control of bleed
- pH-value correction with coordinated measurement and control technology

## Filtration and flocculation

- Gravity filters for filtration in open cooling circuits
- Plants for the preparation and metering of flocculation auxiliary agents



# Coordinated systems for cooling water treatment

## Metering stations and pumps

It almost goes without saying: ProMinent® metering stations and pumps are used wherever precise quantities have to be metered – whether with disinfectants, pH adjustment or in many other applications. Metering with chlorine for disinfection is a simple, safe and economical method of disinfection. ProMinent® metering pumps are standard in water treatment.

## Panel metering systems DULCODOS®

Panel-mounted standard metering systems have been designed to meet the specific requirements of cooling water treatment. The pre-assembled systems are based on components, which have been perfectly coordinated with each other to ensure problem-free operation. You will receive a complete system as a plug-and-play module, which you can install and commission quickly and easily.

## Chemical storage vessels/Tanks

ProMinent® storage vessels and tanks guarantee the highest level of reliability in the storage and handling of chemicals and raw materials. Coordinated with the metering equipment, designed and built for each individual use, they store alkaline solutions, acids and other additives reliably and safely.

## Panel-mounted measurement and control points DULCOTROL®

are online measurement and control units, which are tailored to the requirements of cooling water treatment and optimised in terms of application. All of the components required for measurement, control and monitoring of the different types of water are coordinated with each other and mounted on a PE panel wired ready for connection. The complete measuring point is supplied as standard for the measurement of pH, redox, chlorine, bromine, chlorine dioxide, ozone, hydrogen peroxide and conductivity or a combination of these parameters.





#### **Chlorine dioxide plants Bello Zon® CDV and CDK**

The CDVc series is a ready-wired complete chlorine dioxide plant for the production, metering and monitoring of chlorine dioxide. The series has been designed for the treatment of large volumes of water in a continuous operating cycle. Depending on the model, the amount of chlorine dioxide generated can be anything between 15 and 10,000 g/h. These systems for industrial applications are equipped with numerous control and warning functions and are also suitable for variable-dependent operation.



#### **Ozone plants OZONFILT® and Bono Zon®**

OZONFILT® systems generate up to 245 g/h of ozone from pressurised air or oxygen and feature a compact construction, ease of installation and precise regulation of performance. An electronic power unit guarantees a reproducible volume of ozone independent of fluctuations of mains voltage and pressure. The Bono Zon® vacuum plants cover the demand of up to 720 g/h.



#### **Cooling tower and boiler controls**

The DULCOMETER® Cool-Control, ProMcon and MultiFlex cooling tower controls can provide bleed functions, as well as the precise metering of necessary additives. Cooling plants can therefore be reliably protected from corrosion and sediments and efficiency losses minimised. The continuous monitoring of all relevant parameters by sensors reliably protects the system from incorrect metering.



#### **Gravity filters INTERFILT® SK**

Economical water treatment with gravity filters: open sand filter plants with differential pressure-controlled backwash and integral backwash water reservoir work automatically without the need for service and maintenance.



Further information:

[www.prominent.com/cooling\\_water](http://www.prominent.com/cooling_water)

## Simple and reliable control



The single-channel DULCOMETER® D1Cb measurement and control unit is equipped for all the key measuring variables encountered in basic applications in cooling water treatment and is also fitted with an error and calibration logbook. Functions can be subsequently activated with an enabling code. The large, illuminated graphic display, plain text operating menu in 15 operating languages and pH sensor monitoring ensure reliable, convenient and clear operation.

- All 15 operating languages stored in the memory
- mV connection type: switchable between pH and redox
- Standard signal connection type: all 8 amperometric parameters, such as chlorine, chlorine dioxide, chlorite etc and pH, redox and conductivity via mA in the memory
- 2 power relays for limit monitoring or timer functions
- Monitoring of the metering time with actuating variable switch-off
- Wide-range voltage supply: 90-253 V, 50/60 Hz
- mA sensor input secured against short circuiting and polarity reversal

The Disinfection Controller DULCOMARIN® II is a measurement and control unit, which can be used as a multi-channel controller to process the variables from up to 16 cooling water lines. Metering pumps, chlorine gas metering systems or chlorine dioxide production plants can be controlled directly on the basis of these measured parameters. The standardised CANopen bus system is used to network the sensors to the control unit.

- Control of one to 16 circuits
- Possible measured variables per circuit: pH, ORP/Redox, temperature, chlorine (free and total available chlorine), bromine, fluoride, ammonia, chlorine dioxide, chlorite, conductivity, UV intensity, flow and turbidity
- Simple to wire and flexible subsequent extendibility due to CAN bus system
- Flexibility by extending with plug & play bus modules for measurement, regulation and control
- Major cost benefit due to simple installation and decentralised design
- Plug & play: automatic sensor and metering pump detection
- Simple on-site calibration



## 1 to 4 circuits simultaneously



Up to four cooling circuits or boilers can be controlled simultaneously by the AQUATRAC® cooling tower control. It can perform all the requisite functions, including bleed control, metering of two biocides and inhibitors, as well as monitoring of the entire process. Cooling tower control can be performed in conductive or volumetric mode.

- Simple to extend with I/O plug-in modules
- The enormous flexibility of the control enables up to 4 cooling towers or boilers to be controlled simultaneously (e.g. 1 boiler and 3 cooling towers)
- Flexible programmability ensures unrestricted adaptation to the process
- Configured as standard using only a web browser, such as Internet Explorer without special software
- Convenient extended configuration and remote control using Trackster 3 software

The ProMcon is a microprocessor-controlled cooling tower control for basic applications in small to medium-sized cooling towers and air conditioning plants.

Functions, such as bleed the metering of up to two biocides and the volume-proportional metering of corrosion inhibitors are possible thanks to the use of an event-controlled timer (32 events per cycle).

- Bleed lockout after biocide dosing
- Pre-bleed before biocide dosing
- Metering of up to two biocides and one inhibitor
- Event-controlled timer (32 events per cycle) for 2 biocides
- Automatic seasonal (summer / winter) switch for biocides A and B
- Contact water meter adjustment
- Auxiliary measuring and control variable (pH or ORP/Redox or chlorine/bromine)
- Recording of conductivity values, bleed and alarms via RS 232 interface



## Worldwide contact

---



The ProMinent Group is at home in 100 countries across the globe. This guarantees worldwide availability of our products and short distances to the customer. All over the world ProMinent offers identical quality standards for products and services. ProMinent is where you need it: experience, knowledge and expertise in water treatment and metering technology

ProMinent Dosiertechnik GmbH  
Im Schuhmachergewann 5-11  
69123 Heidelberg  
Germany  
Phone: +49 6221 842-0  
Fax: +49 6221 842-617  
info@prominent.com  
www.prominent.com

---

**Experts in Chem-Feed and Water Treatment**