CoolPROTECT
Control Equipment

Ready-to-connect, preassembled bleeding system with programmable control device for optimum cooling water treatment.

- **Conductivity-dependent bleeding control**
- **Optional timer-controlled biocide metering**
- **Maintenance-free inductive conductivity measurement**
- **Forced recirculation according to VDI regulation 6022**
- **Real time module with 2 independent day and week clock timers**
- **High efficiency due to adjustable interlocking of simultaneous bleeding and biocide metering)**
- **Integrated acoustic alarm signal**
- **Simple, menu-assisted operation in plain text**
- **Definable access code**

Cooling tower bleeding

In a cooling tower, a continuous increase in the minerals dissolved in the water takes place due to the continual evaporation of the water (bleeding).
CoolPROTECT continually controls the conductivity and the bleeding grade of the cooling tower water.
If the measured value exceeds a preset upper limit W+, deconcentration of the water is introduced by transfer of water from the cooling circuit into the discharge channel.
The consequent reduction in the level of the cooling water is sensed by a level control device, which controls the introduction of fresh feed water. This supply of fresh feed water causes the concentration to decrease and the conductivity reduces.
If the conductivity now falls below a preset lower limiting value W- the deconcentration process is terminated.
The water in the cooling circuit continues to be subject to the process of salination. When the upper limiting value W+ is again reached, the deconcentration process restarts.

Biocide metering

Microbiological cultures form in the cooling water under conditions that are favourable to this phenomenon (high temperatures, high concentration of minerals).
In order to protect the system and preclude any health risks to humans, the cooling water circuit must be dosed with a germicide product at regular intervals.
With CoolPROTECT it is possible to carry out time-controlled biocide metering intervals. The duration of the metering and reaction time is arbitrary.
The bleeding controller is inhibited during the metering and reaction time. The current operating status is displayed on the screen in plain text.
You can also activate a pre-bleeding function. This means that if, when biocide dosing is triggered by the timer, the conductivity value is above the lower bleeding threshold (W), bleeding has priority over biocide dosing.

Circulation control

In order to act against contamination resulting from water circuits that are periodically deactivated, optional communication between CoolPROTECT and the cooling water control system can be established. This control system independently activates the water circuit circulation pump even if the cooling tower is switched off. It then starts biocide dosing after a settable circulation time has passed.

Technical data (conductivity measuring unit):

Dimensions:	360 x 110 x 160 mm (w ∗ d ∗ h)
Ambient temperature:	max. 45° C
Weight:	approx. 4.8 kg
Power supply:	230 V AC, 15 VA 50/60 Hz
Protection type:	IP 65
Protection class:	III

Control electronics

Display unit:	Two-line, 16 digit LC Display
Control functions:	Conductivity controller Time control
Inputs:	– Conductivity probe, inductive – Temperature sensor, conductivity – Enable contact
Outputs:	– Change-over contact for alarms – Acoustic alarm, 24 V AC (buzzer) – Change-over contact for bleeding – Change-over contact for biocide control – Potential-free changeover contact for pre-circulation (cooling water circulation pump)

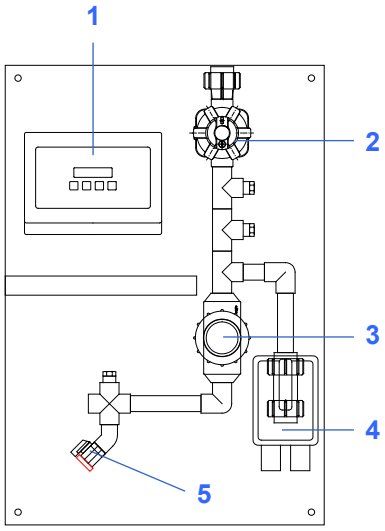
Conductivity measurement:

Measuring range:	0 - 3000 µS/cm in steps of 1 µS/cm
Accuracy:	±10% of the set conductivity value < 3000 µS/cm (We recommend that the devices are operated above 150 µS/cm)
Repeatability:	Amplitude fluctuation max. ± 2.5% of the set value
Timing:	Real time clock with battery buffer (lifetime > 10 years)

Notice: To guarantee the newest state of our products, we reserve the rights for single technical changes.

Ordering data:

	Article	Material-No.

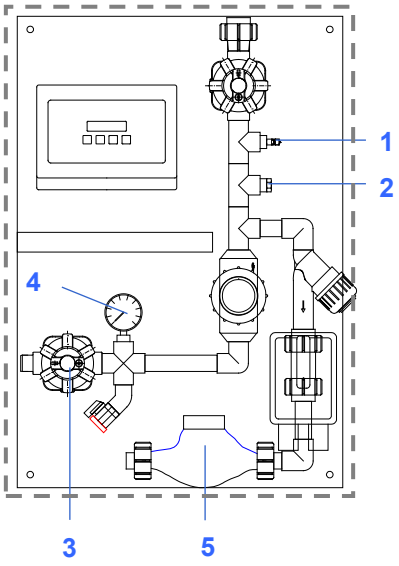


CoolPROTECT basic system

Bleeding unit CoolPROTECT — on request
with integrated timer for biocide metering pre-assembled on a mounting plate (500 x 720 mm)

Bleeding unit CoolPROTECT — on request
with integrated timer for biocide metering and pre-circulation
pre-assembled on a mounting plate (500 x 720 mm)

Extent of supply:
- CoolProtect conductivity measuring unit (**1**)
- Manual diaphragm valve (**2**)
- Conductivity measuring probe (**3**)
- Motor driven ball cock 230 V (**4**)
- Test portion cock (**5**)



CoolPROTECT options — on request

Option 1	Metering valve 1 for biocide metering, ready-assembled
Option 2	Metering valve 2 for metering of a 2nd biocide or a anticorrosive, ready-assembled
Option 3	Manual diaphragm valve on inlet side
Option 4	Manometer 0-10 bar
Option 5	Contact water meter with pulse output 1 pulse/litre
Option 6	Components for biocide metering (see page 4)

	Article	Material-No.
	Components for biocide metering for self installation by the customer For removal of standard original containers 10-60 liter.	on request
	*Existing of:* 1 diaphragm metering pump EMP II E60	
	1 wall bracket for metering pump EMP II	
	1 suction pipe D16, length: 750 mm	
	1 suction pipe adapter	
	5 m PE-hose 4/6 mm (ID/AD)	
	Components for biocide metering (degassing products) for self installation by the customer For removal of standard original containers 10-60 liter.	on request
	*Existing of:* 1 self-venting diaphragm piston pump EMP KKS E60	
	1 wall bracket for metering pump EMP KKS	
	1 suction pipe D32, length: 750 mm with return connection	
	1 suction pipe adapter	
	5 m PTFE-hose 4/6 mm (ID/AD)	

Article	Material-No.
Metering unit for biocide metering 75 liter Ready for connection metering unit *Existing of:* 1 diaphragm metering pump EMP II E60 mounted on a container 1 metering product container PE, 75 l, Ø 460 mm, height 630 mm 1 suction pipe assembled and connected 1 level switch with level pre-warning and empty signal assembled and connected 5 m PE-hose 4/6 mm (ID/AD)	on request
Metering unit for biocide metering 75 liter (for degassing products) Ready for connection metering unit *Existing of:* 1 self-venting diaphragm piston pump EMP KKS E60 1 metering product container PE, 75 l, Ø 460 mm, height 630 mm 1 suction pipe assembled and connected 1 level switch with level pre-warning and empty signal assembled and connected 5 m PTFE-hose 4/6 mm (ID/AD)	on request