

## low-germed water production and ensuring in open cooling and air-conditioning circuits

### initial situation

Circulating water in air conditioning, air humidification or open cooling systems are heavily contaminated with germs depending on the process conditions.

These loads lead to the formation of biofilm on pipe walls and heat exchangers. They are the cause of corrosion and energy loss in technical systems, resulting in insufficient energy efficiency and high repair costs.

Furthermore, these bacterial loads mean that health-threatening microorganisms, such as legionella, multiply. These pathogens are absorbed by people through atomized spray and can cause serious illnesses.

In order to prevent these problems, a constant disinfection of the process water is necessary. In practice, chemicals, so-called biocides, are dosed cyclically.

The use requires special safety requirements in storage and operation. Compliance with these requirements and costs are very high during operation.

### cost-saving disinfection technology

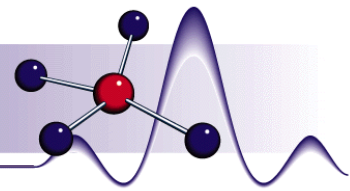
With the new flow method from OFS, the circulating water is cleaned up to 99% microbiologically, health-threatening microorganisms are greatly reduced and biofilms are removed.

The special feature of this cleaning process is that the necessary biocides are generated and do not have to be stored or dosed.

Thanks to efficient inline electrolysis with special electrodes, hypochlorous acids with a high disinfectant effect are formed from the chloride ions in the process water.

If chloride concentration in the process water is not sufficient for efficient disinfection, the concentration can be increased by cyclic addition of sodium chloride ions for efficient chlorine formation.





## procedure

An inline electrolysis is implemented by an electrical special filter, installed as a disinfection module in the bypass to the circulation process line. This produces chlorine-containing active substances and radicals, which subsequently lead to high oxidation and microcrystallization processes.

This process leads to ecological disinfection of the water and the entire system.

In this way, the requirements for low-germ water are met.

With a sufficient chloride concentration in the process water, an economically effective alternative is offered without the additional use of special chemicals, biocides.

## technical data

- electrolysis housing:  
approx. 50 cm long, Ø 7 cm
- connection both sides:  
1" or 2" pipe flange screwed
- flow rate bypass: approx. 0.8 to 2 m<sup>3</sup>/h
- pressure range: approx. 2 to 8 bar
- application of energy: approx. 100 Watt
- control system: 600 x 400 x 200 mm  
(length x width x height)
- filling volume: max. 20 m<sup>3</sup>
- circulation volume : min. factor 5 to 10
- medium:  
cooling and air-conditioned water  
with microbiological contamination
- power consumption: 230 V AC 50/60 Hz
- flow rate depending control system
- process monitoring with redox analysis

## principle sketch for operation

