

We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS



Bürkert Microsensors

Microsensors for Dialysis Devices

Bürkert: Your partner for innovative sensors in medical technology. Our microsensors measure conductivity, ISE (specific ions such as Ca^{2+} , K^+ , Mg^{2+}), pH, (zero) chlorine, turbidity, or continuous flow very precisely in an extremely compact form to improve the processes in your dialysis device. We support you in the whole development process – from the idea to series production.

Increased safety using less space with customised systems

How well a medical device functions depends largely on the sensors used. They influence the state of function and safety of the devices and are used for monitoring and documentation. While sensors inside the machine are intended to improve the dialysis process, sensors on the patient side must increase safety.

Bürkert offers highly sensitive microsensors such as miniaturized conductivity, pH, and ISE sensors. Miniaturisation allows the installation space to be reduced considerably. The smaller internal diameter with low fluidic resistor has many advantages as the cell is flushed and the probability of bubbles becoming trapped is reduced. A smaller measuring volume also leads to a faster response to sample changes and better rinsability. Overall, the same information content is obtained with less sample consumption. In addition, the small size enables versatile integration.

With customised compact systems from Bürkert you can optimise your device in terms of functionalities and design. We look back on over 20 years of experience in developing fluidic solutions for medical devices. Based on our injection moulding competence and our broad portfolio of valves, flow and analytical sensors, and pumps we design and manufacture compact systems based on your needs – completely tested and with customised sensors adapted to your design.

Your Advantages



Microsensors can be adapted to your requirements



Very compact design



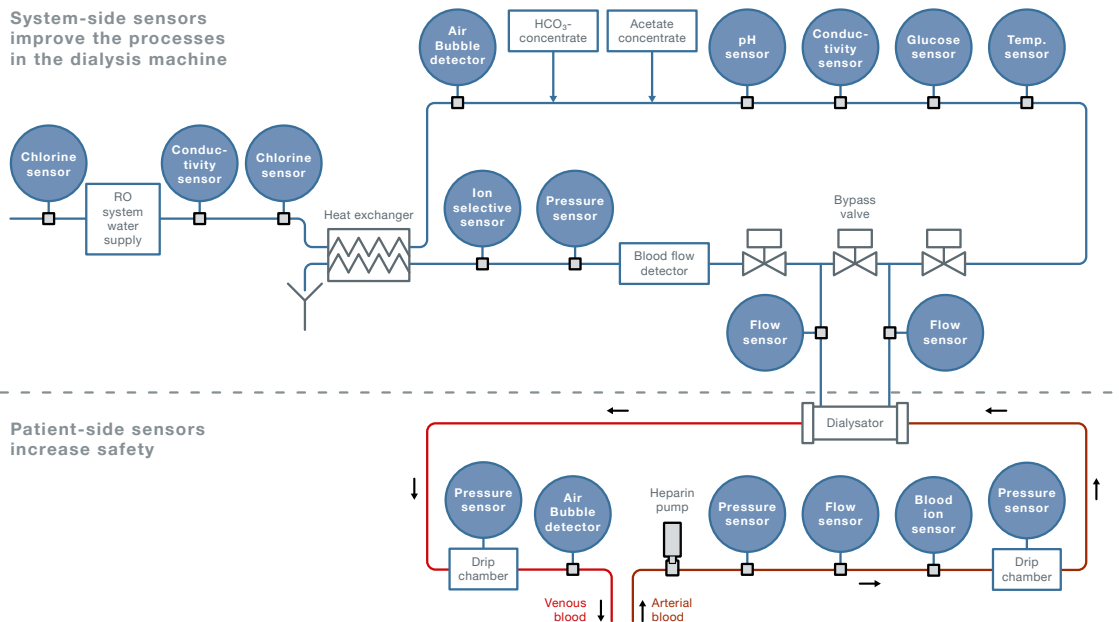
Ideal fit into your device with injection moulded parts



Continuous monitoring and documentation

Areas of application

Thanks to the minimal media consumption and fast reaction time, Bürkert microsensors improve the whole dialysis process and increase patient's safety:



Water: Central factor in dialysis

In dialysis centers, around 120 liters of water run through the machine during a standard dialysis process. For machines used at home and for portable models it is necessary to reduce the amount of water considerably for reasons of space and weight. To prepare water properly for dialysis, measuring devices are required that reliably analyse physical, chemical and microbiological parameters.

In order to meet the high water quality requirements for medical technology applications, the full functionality of the device must be continuously checked and documented. Bürkert microsensors can measure the chlorine content and the conductivity of the water to indicate if further water treatment is needed.

Dialysate mixing in place

If dialysate is mixed in the device, a two-stage conductivity measurement ensures the correct mixing ratio of acid concentrate, bicarbonate concentrate, and water. Afterwards, a pH measurement guarantees the correct pH range of the dialysate. Continuously measuring the

relevant parameters fast and reliably, Bürkert microsensors enable the monitoring or control of the required mixing ratio.

Continuous monitoring

To improve the process in the dialysis machine and increase the patient's safety, various parameters can be measured, monitored and documented continuously, such as conductivity, pH, temperature, ORP, ion concentration, and chloride. Our microsensors, for example, measure changes in the electrolyte composition of the dialysate or detect if blood leaks into the dialysate circuit.

Bürkert system solutions with sensors in the form of microchips can be integrated into any device manufacturer's housing. There are no limits to further optimisation and design options, meaning that dialysis devices may also be possible as backpack solutions in the future.

Did you know?

Bürkert can make long-lasting reusable or single-use disposable sensors.

What about another application?

Successful disinfection is often verified by measuring the conductivity of the fluid. Besides conductivity, Bürkert offers microsensors to measure pH or chlorine.

These sensors allow you to monitor the composition of the disinfection solution and guarantee that the cleaning agent passing through the device matches the required specification.

The complete package for dialysis devices

In addition to microsensors, Bürkert offers a whole range of solutions for medical technology including innovative, customised system solutions. Discover our portfolio for dialysis machines.



Contact

You want to discuss your specific application?
Contact our experts
E-Mail: microsensors@burkert.com

