EXERGY

Space-saving, efficient and safe: Smart WFI dispensing systems

We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS

Compact POU Dispensing Systems with innovative flowmeter

COOPERATION WITH EXERGY

Leading pharmaceutical companies around the world rely on Exergy for their Point-of-Use (POU) Dispensing Systems. With its unique turn-key PureX solutions, the company sets the benchmark in the sterile, cost- and space-saving dispensing of ultrapure water and water for injection (WFI) from hot WFI loops. Exergy achieves this not least thanks to the compact components from Bürkert.

About Exergy

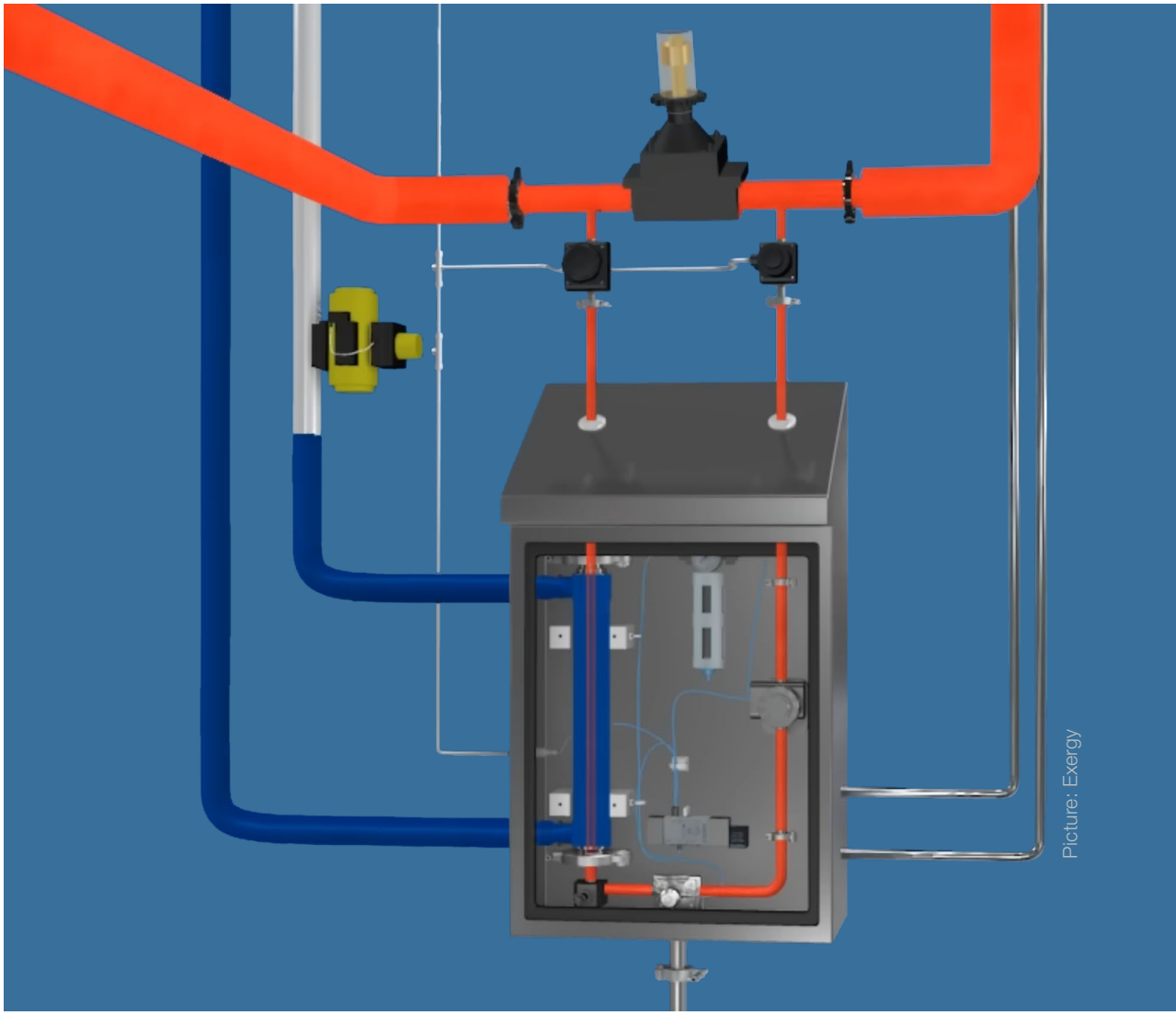
Exergy LLC, located in Garden City, New York, is a global leader in designing and manufacturing compact, high-performance heat exchangers and fluid handling systems. With over 100 000 heat exchangers installed worldwide, Exergy has built a reputation for providing innovative, reliable and cost-effective solutions to a diverse range of industries, including pharmaceutical and life sciences industry. Exergy delivers solutions that meet the most demanding standards of quality, performance and sustainability and is a strategic partner for clients seeking to optimise processes, reduce energy consumption, and improve operational efficiency.

24/7 safe and sterile operation

PureX POU Dispensing Systems, a collaboration between Exergy, LLC and Hydropure Pvt Ltd., are equipped with Exergy's compact, high-performance shell and tube heat exchangers to deliver temperature-controlled WFI/PW on demand in under 30 seconds. The PureX systems can be configured to dispense anywhere from 100–18 000 LPH of cool WFI at process temperatures down to as low as 10–15 °C.

Over 1 000 PureX Dispensing Systems have been installed globally with projects at most of the major pharmaceutical companies providing reliable precision cooling for a variety of process demands. At the core of the cooling control process are Bürkert actuated control valve type 2301 with integrated digital positioner type 8694 which have been integral on PureX systems since they were first introduced.

PureX systems are designed and manufactured to the rigorous quality requirements and hygienic standards of the pharmaceutical industry. When installed and not in use (i.e. standby), a continuous flow of hot WFI circulates through the system to provide continuous sanitization of all product contact components. The Exergy zero-maintenance Heat Exchangers are uniquely designed for the PureX applications and selected to ensure turbulent flow is maintained through all system components.



Exergy POU Dispensing Systems utilise a sub-loop with a continuous flow of hot WFI, which reliably prevents microbial growth and cross-contamination. PureX systems automatically provide cool WFI on demand at individual use points while keeping the balance of the main loop hot, providing maximum flexibility for operations demands.

Compact and cost-saving monitoring

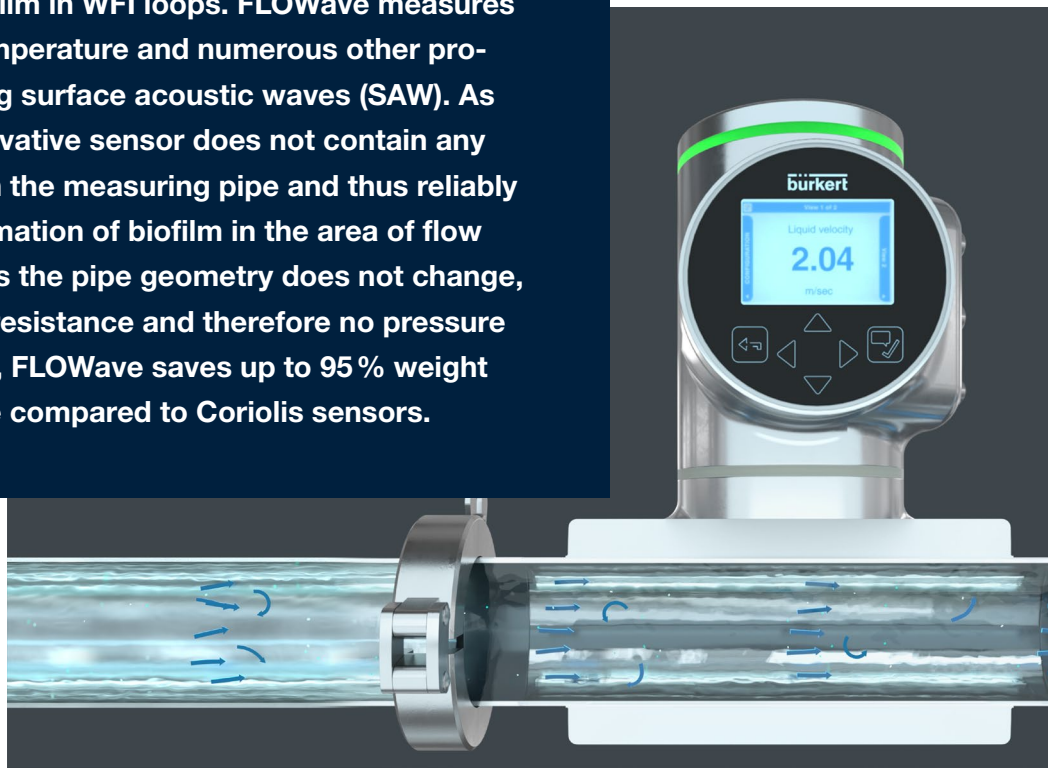
Introduction of the Bürkert type 8098 FLOWave flow sensor into the PureX design allows for convenient setting of the standby flow rate and continuous monitoring of the system status. “We first integrated FLOWave directly into our systems around five years ago. One of our large international pharmaceutical customers wanted to simplify the process of commissioning projects where high numbers of PureX systems were installed. Having a FLOWave in each cooler avoided the need to install clamp-on type meters and move them from system to system. This was especially beneficial when the coolers are installed in hard-to-reach technical spaces,” says Thomas Bracco, Director of Program Management at Exergy.

FLOWave determines the flow without any media-contacting parts in the measuring pipe, thus ensuring aseptic operation. The flowmeter, which measures on the basis of surface acoustic waves and therefore without mechanically moving parts and vibrations, is significantly more compact and Total Cost of Ownership is very interesting compared to other flow measurement solutions.

“Incorporating the compact FLOWave directly into the PureX systems also allows integration of additional features that increase operational efficiency and can reduce other CAPEX costs. With automated dispense valve positioners, it allows the Coolers to accurately modulate the dispense flow rate for different uses. With PureX Batching Software it enables automated precision dispensing of user-entered batch volumes,” adds Melissa Fryer, Director of Sales & Marketing at Exergy.

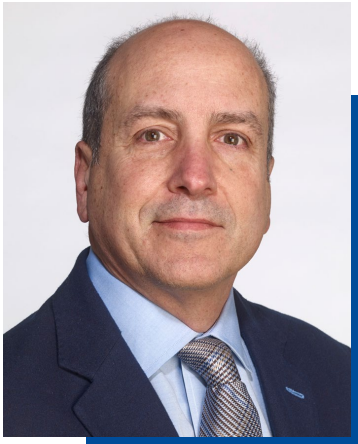
Did you know?

Laminar flow, obstacles and undercuts favour the formation of biofilm in WFI loops. FLOWave measures the flow rate, temperature and numerous other process values using surface acoustic waves (SAW). As a result, the innovative sensor does not contain any flow obstacles in the measuring pipe and thus reliably prevents the formation of biofilm in the area of flow measurement. As the pipe geometry does not change, there is no flow resistance and therefore no pressure drop. In addition, FLOWave saves up to 95 % weight and 47 % volume compared to Coriolis sensors.



Watch the video!

The compact size of the PureX POU Dispensing Systems is unrivalled worldwide. No wonder, as they utilize space-saving heat exchangers from Exergy as well as the just as compact type 8098 FLOWave SAW flowmeters and type 2301 control valve with integrated type 8694 positioner from Bürkert.



“Integrating the FLOWave into the PureX POU Dispensing System and having continuous availability of flow data reduces time and effort during commissioning activities, especially during initial start-up of the main WFI loop when conditions can be dynamic. Similarly, setting and verifying the flow rate after any type of maintenance is also simplified, avoiding the need to install external flowmeters.”

Thomas Bracco
Director of Program Management at Exergy

“Incorporating the compact FLOWave directly into the PureX systems allows integration of additional features that increase operational efficiency and can also reduce other CAPEX costs. With automated dispense valve positioners, it allows the Coolers to accurately modulate the dispense flow rate for different uses. With PureX Batching Software it enables automated precision dispensing of user-entered batch volumes.”

Melissa Fryer
Director of Sales & Marketing at Exergy

Sustainable and economical production

“Partnering with Exergy to incorporate custom PureX POU Dispensing Systems into your WFI distribution can result in significant year over year operating cost savings, reduced WFI waste, CAPEX savings, and all in compact turnkey cabinet solutions. A recent client who installed 18 POU Coolers serving over 45 individual use points in their new facility expects hundreds of thousands of dollars of savings per year in reduced WFI waste and energy savings. The smaller water consumption, waste and energy usage also provides added environmental benefits,” emphasises Melissa Fryer.

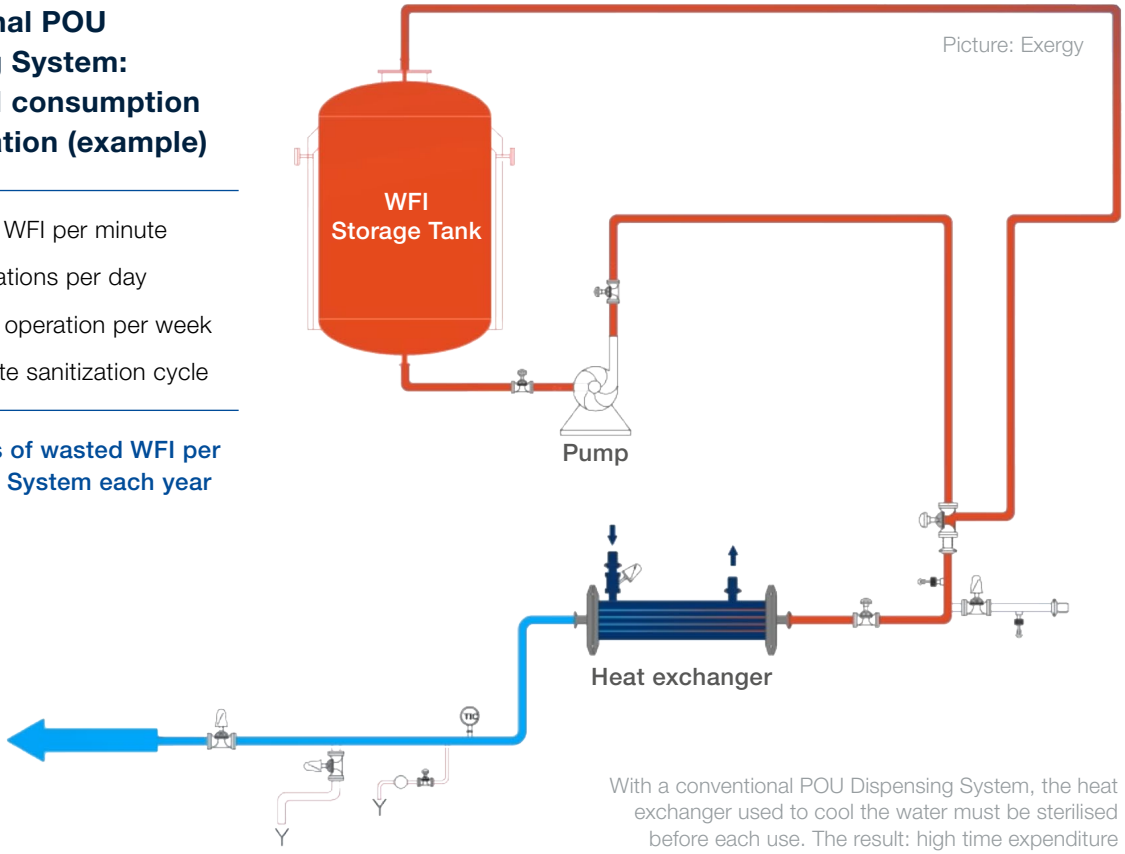
Peace of mind for the future

With the innovative concept of the PureX Dispensing Systems, Exergy enables its customers to operate their systems safely, cost-efficiently and sustainably today and in the future. The experts are always keen to consider the customer requirements of tomorrow.

Conventional POU Dispensing System: annual WFI consumption for sanitization (example)

10	litres WFI per minute
2	utilizations per day
5	days operation per week
5	minute sanitization cycle

26 000 **litres of wasted WFI per POU System each year**

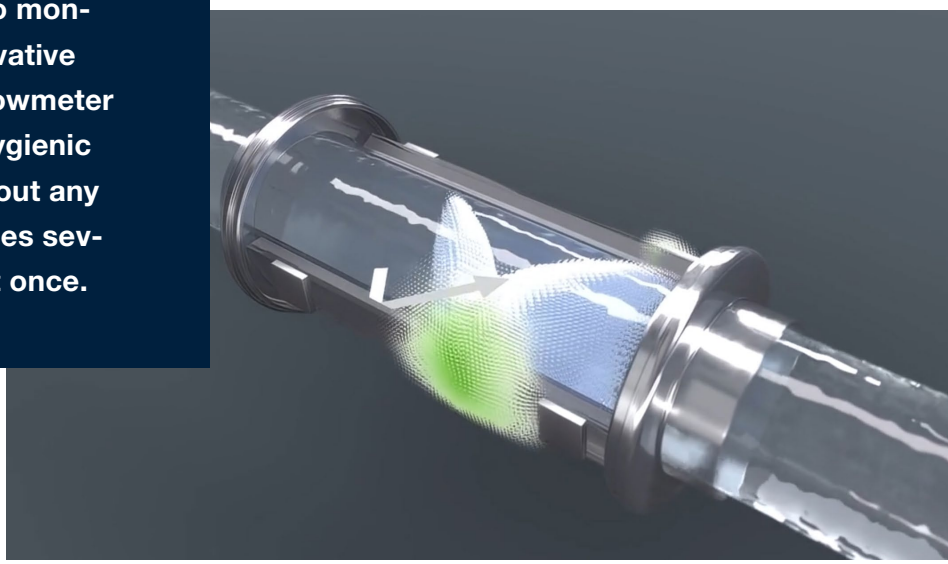


With a conventional POU Dispensing System, the heat exchanger used to cool the water must be sterilised before each use. The result: high time expenditure and water consumption. When several use points are involved, the amount of wasted WFI adds up very quickly. With Exergy's solution, zero WFI is wasted.

Did you know?

FLOWave uses Surface Acoustic Waves (SAW) technology to monitor the flow. With the innovative measuring principle, the flowmeter enables contactless and hygienic measurement, comes without any moving parts and determines several process parameters at once.

Learn more about the SAW technology!



EXERGY
HEAT TRANSFER SOLUTIONS

HYDROPURE
Transforming water

PUREX
dispensing systems

Bürkert Fluid Control Systems
Christian-Bürkert-Straße 13–17
74653 Ingelfingen
Germany
Tel.: +49 7940 100
info@burkert.com
www.burkert.com

We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS