



We
make
ideas
flow.

bürkert
FLUID CONTROL SYSTEMS

Your precision
partner for
pharmaceutical
+ biotechnology
needs

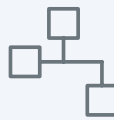
/ Competence in the Pharmaceutical Sector / Like many sectors, the pharmaceutical industry is also undergoing digital change. Medicines have to be manufactured in ever faster time-to-market cycles, and pharmaceutical plants have to work more efficiently, more intelligently and more sustainable, without jeopardizing the highly sensitive process reliability.



Pharma 4.0™

Pharma 4.0™ aims to connect everything, creating new levels of transparency and adaptivity for a “smart” plant floor. This connectivity enables faster decision-making and provides in-line and on-time control over business, operations, quality, and regulatory compliance.

Our cutting-edge technology allows you to get Pharma 4.0™ ready – today.



Extensive pharmaceutical expertise

Our dedicated bio/pharmaceutical industry consultants can not only aid in design and selection criteria - they can help you by developing customized systems for your project or process, making qualification, validation, and final acceptance tests (FATs) smooth and seamless.



Everything from a single source

Who doesn't love one-stop shopping?

From internationally standardized, ASME BPE & EHEDG compliant solutions with comprehensive documentation packages and innovative flow measurement technologies to utility support valves and complete control cabinets – we've got you covered.

Product + Solutions - Diaphragm Valves

Manually operated 2-way valves



Type 2933

2/2-way diaphragm valve offers a flow-efficient valve body with little dead space that enables high flow rates and a wide range of possible uses.



Type 2934

Zero-static tee (ZST) diaphragm valve comes with optional plastic or stainless steel hand-wheel, ensures use in hygienic or aggressive ambient conditions.



Type 2935

Tank bottom diaphragm valve offers a compact and autoclavable designed actuator.

CLASSIC Pneumatically operated 2/2-way valves



Type 2031

Our robust pneumatically controlled diaphragm valve is available with PA (nylon) or PPS (thermoplastic) actuators for demanding applications.



Type 2032

When mounted on a machined zero-static tee (ZST) body, the PA (nylon) or PPS (thermoplastic) actuators combine for no holdup of valuable product, clean utility process fluids, and gases.



Type 2033

When integrated into the fabrication of a tank, this design allows for zero holdup of valuable products in storage, batching, mixing, or blending tanks and bioreactors. The PA (nylon) or PPS (thermoplastic) actuators are rugged, reliable, and dependable for aggressive fluids and ambient conditions.



Type 2063

2/2 way diaphragm valve with pneumatic actuator in stainless steel (INOX). The proven and robust actuator with stainless steel valve body ensures use under hygienic or aggressive environmental conditions.

Product contact surfaces are 20 Ra mechanical (BPE SF1) or 15 Ra electro-polished (BPE SF4) as standard, but others are available upon request.

All Bürkert diaphragm valves come with ASME BPE-compliant documentation as standard, and additional documentation is available upon request.

ELEMENT Pneumatically operated 2/2-way valves



Type 2103

2/2-way diaphragm valve with pneumatic stainless steel actuator (ELEMENT) for decentralized automation. The integration of automation units is possible in all configuration levels (can be retrofitted); a fieldbus interface can also be integrated.



Type 2104

The externally controlled diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm, and a zero-static tee (ZST) valve body. The integration of automation units Type ELEMENT is possible in all configuration levels (can be retrofitted); a fieldbus interface can also be integrated.



Type 2105

The externally controlled diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm, and a tank bottom valve body. The integration of automation units Type ELEMENT is possible in all configuration levels (can be retrofitted); a fieldbus interface can also be integrated.

 IO-Link

 ASi

 CANopen

 HUS EDIP

 EtherNet/IP

 Modbus TCP

 PROFINET



Type 8801

ELEMENT On/Off Valve
Systems with decentralized automation enables the easy integration of automation modules whether they are electrical/optical position feedback, pneumatic control units, an optional integrated fieldbus interface or even an explosion proof control head.



Type 8802

ELEMENT continuous control valve systems enables the easy integration of digital automation modules in all extension stages. The fully integrated system with control valve and automation unit has a compact and smooth design, integrated pneumatic lines, IP65/67/NEMA 4X degree of protection and superior chemical resistance.



Type 2036

Robolux Multi-way/multi-port diaphragm valve pneumatically operated

This multi-way diaphragm valve was designed to control ultra-pure, sterile, aseptic, steam and CIP media. It enables optimum sampling, draining and distribution of critical process media.

When the product is valuable, highly critical, or a holdup volume is unacceptable, there is simply no better valve on the market.



EVA is available as both open/close and modulating control

Type 3323

Electromotive 2/2 way diaphragm valve (ON/OFF)

The electrically controlled diaphragm valve is highly accurate, repeatable, and precise. IP protection IP65/IP67 ensures ingress protection and

a robust, programmable fail-safe position are possible with this new design valve.

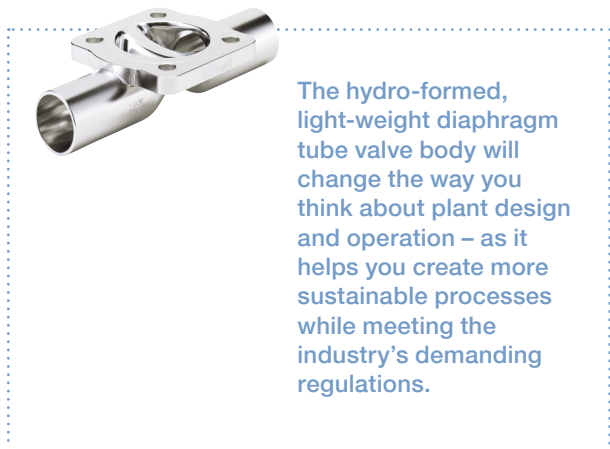
Product + Solutions - Diaphragm Valves



The multiCELL is the perfect device to collect and control all of the CIP cleaning processes.

Type 8619 Transmitters & Controllers

The multi-cell collects and logs data from up to twelve sensors. You can check temperature, pH, conductivity, ORP, chlorine or any analogue parameter at a glance. If required, this device can also perform a range of dosing and control functions with a simple, intuitive user interface.



The hydro-formed, light-weight diaphragm tube valve body will change the way you think about plant design and operation – as it helps you create more sustainable processes while meeting the industry's demanding regulations.



Type 8098 FLOWave SAW flowmeter

The FLOWave is based on SAW (Surface Acoustic Waves) technology and designed for applications with the highest hygienic demands. This is achieved by using: suitable stainless steel materials and a measuring tube free of any

wetted parts except for the actual tube. This flowmeter offers a range of integrated functions, including flexibility, ease of cleaning, compact dimensions, lightweight, easy installation and handling.



Type 2100 Pneumatically operated 2/2-way angle seat valve ELEMENT

This valve is specially optimized for decentralized process automation and fulfills the tough criteria in process environments. Its unique design allows easy the integration of automation units, from electrical/optical

position feedback to pneumatic control and integrated fieldbus interface. High flow rates, long service life and easy integration utilizing ELEMENT control heads for networked connectivity.

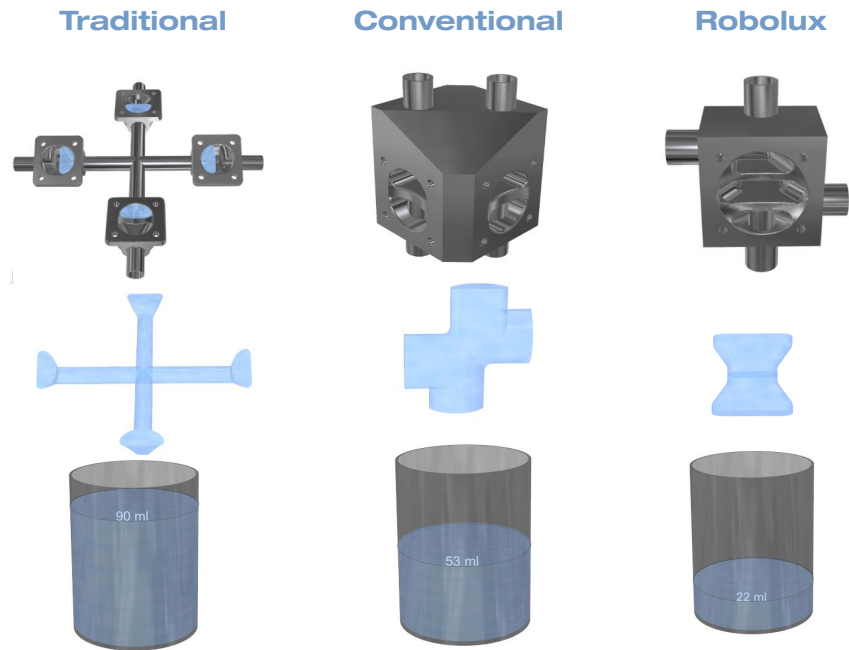


WARNING: Never touch
the hot parts of the machine.
WARNING: Do not open
the machine cover
until the pressure is released.
AVVERTIMENTI: Non toccare
le parti calde della macchina.

Block & tank valve solutions for pharmaceutical applications

/ New thinking, new technology, new design / Traditional array and welded tandem diaphragm valve configurations have largely been replaced by modern Block Valve Solutions. Block Valve Solutions is the reduced hold up of volume, faster cleaning, reduced footprint and compactness for tight installs. The design is without internal welding which enables complex designs that are not feasible with traditional welded configurations. The unique patented advanced Robolux twin-weir diaphragm valve system even exceeds the single weir block solutions in all categories!

Block Valve Solutions



Type 2034 **Multifunction block and weld solution**

Minimum dead-leg. Hermetical separation of fluids from the operating mechanism by diaphragm. Easy integration of automation units with ELEMENT.

/ Understanding the process / In the world of pharmaceutical manufacturing; compactness, smart communications, plant footprints, cleaning and sterilization, dead legs, cross-contamination, and validation are everyday concerns. Pharmaceutical manufacturing relies on utilities liquids and gases being readily available and of the desired quality. These applications are critical in upstream integrity as well as overall plant performance.





Product + Solutions - Precise Gas Control



Type 8745
Mass flow controller
Mass flow meter

- Suitable for flowrates up to 2500 NI/min
- Thermal inline sensor located directly in the main gas stream provides fast response times while maintaining a low pressure drop



Type 8741
Mass flow control
Mass flow meter

- Suitable for flowrates up to 160 NI/min
- CANopen based Bürkert system bus is suitable for integration into Industrial ethernet or fieldbus networks in combination with the fieldbus gateway Type ME43



Type 8742
Mass flow controller
Mass flow meter for
multichannel gas flow systems

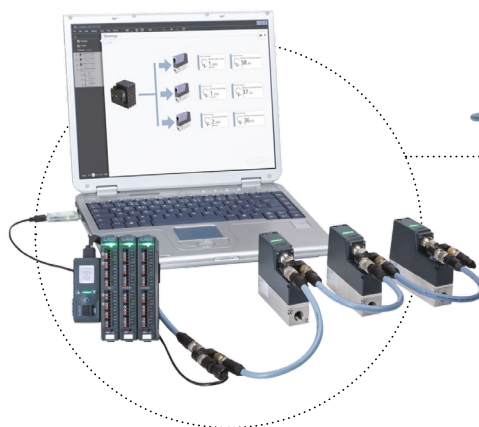
- High accuracy and repeatability
- High ingress protection for washdown applications
- USP Class VI and FDA conformance



Type 8746
Mass flow controller for
multi-channel gas flow
systems (multi-MFC system)

- Flange-mounted options for rapid-swap and maintenance
- 3.1 Material certificates
- Field calibration verification and adjustment

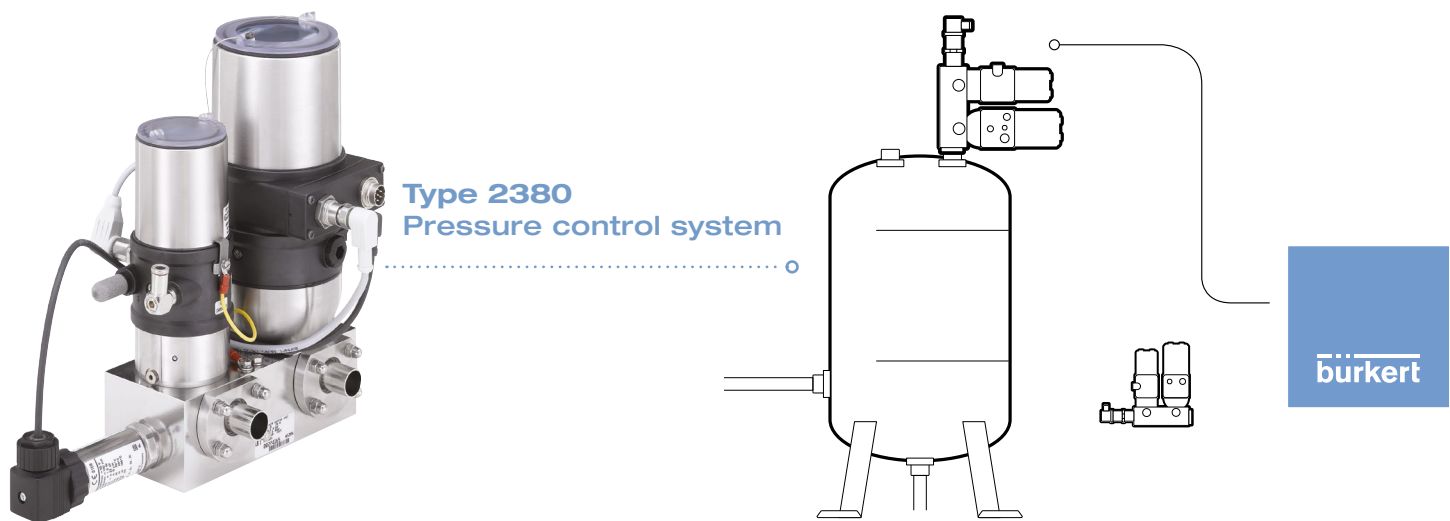
Future-proof automation solutions



hüS

powered by
EDIP

/ Is the pressure in the tank correct? / Filling or emptying tanks often presents you with challenges. For example, the product must be protected from accidental contact with the atmosphere and always covered with a “blanket” of inert gas, such as nitrogen, during all production phases. In processes such as fermentation, organisms in the tank are continuously ingesting or releasing gases. To control the prevailing pressure, they must be precisely released over time. In this scenario, hygienic pressure control systems provide maximum safety – ensuring the pressure in the tank is correct.



Better process reliability



Since the response time is decisive, we have integrated the functionality directly in the system. The signal from the controller reaches the actuator in half the time – thereby improving the reliability of your process.

Optimum pressure control



Stable gas pressure control protects sensitive media against the ingress of air. With the Bürkert solution, you can maintain the ideal overpressure in every situation, even when the tank volume is fluctuating.

Precise filling



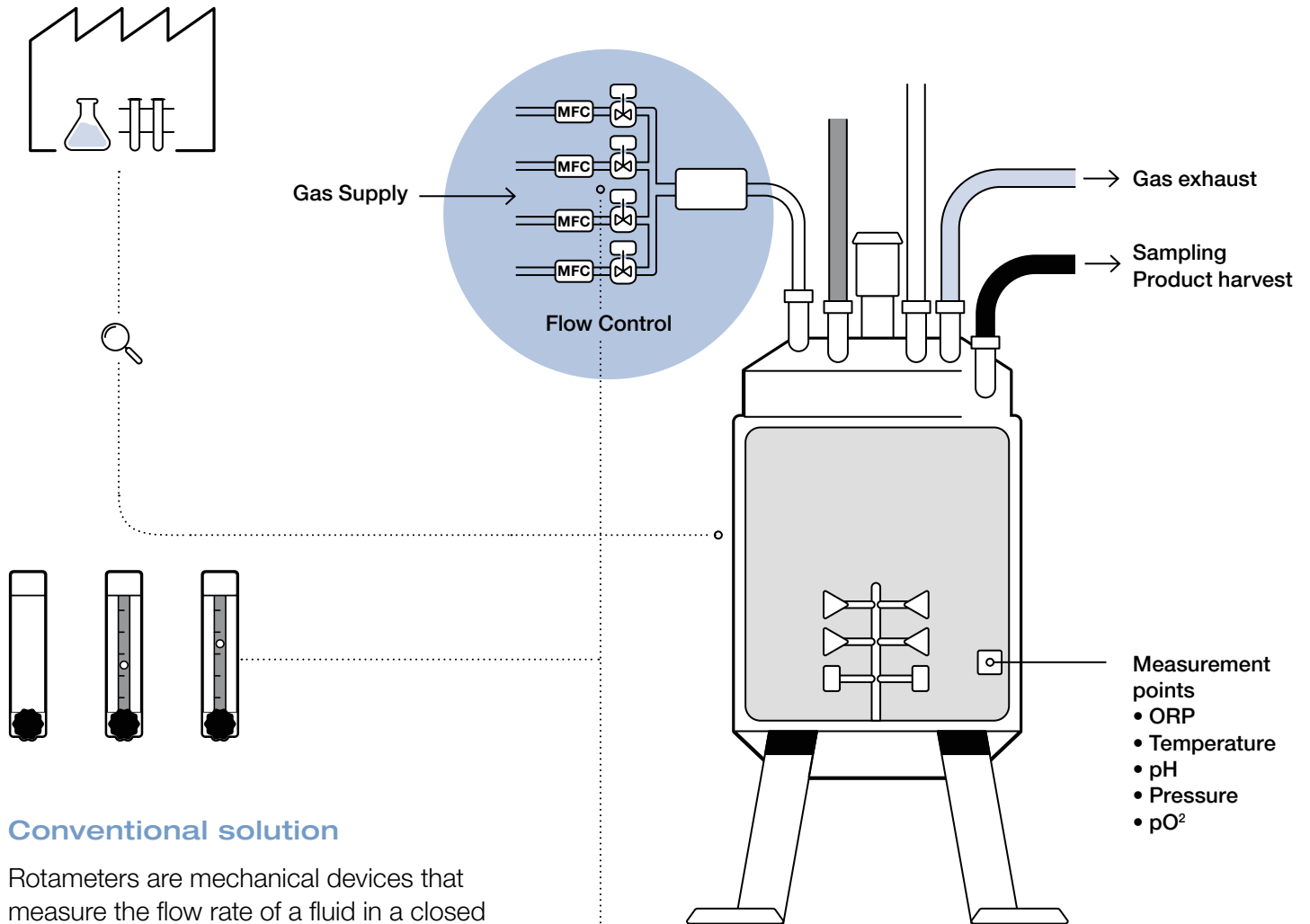
Precisely dosed volumes ensure the pressure on the product can be finely adjusted no matter how full your tank is.

Reduced maintenance workload



The compact system solution can be attached directly to the tank. The components are not damaged during cleaning and sterilization – this saves maintenance costs and guarantees constant performance throughout the product life cycle.

/ Precise gas control / With mass flow controllers (MFCs) by Bürkert, the fermentation process is dependable and reliable. The devices conform to USP Class VI, FDA and can be supplied with ASME BPE compliant material test reports (MTRs). In contrast to the measurement with variable area flowmeters using needle valves, they guarantee high quality and repeatable processes. Thanks to the high turn-down ratio up to 400:1, you can control very small to large gas flow rates with extreme precision.



Conventional solution

Rotameters are mechanical devices that measure the flow rate of a fluid in a closed tube. However, the principle used is based neither on mass-flow nor volume-flow measurement. They must be manually calibrated and only function at the pressure and temperature for which they have been set.



Approval

To ensure validation of the process and licensure of the facility, the components used must conform to USP (FDA) requirements and the ASME BPE Standard.

WFI loop monitoring: Ensuring regulatory compliance and saving operating costs with revolutionary new flow measurement technology.

Water for injection (WFI) for the pharmaceutical industry requires constant flow to prevent the growth of harmful organisms. The amounts of energy required for the production, distribution and storage of WFI result in significant operating costs. The new FLOWave flowmeter features a lightweight, cost-effective and fully compliant solution to this problem with zero pressure drop.

Watch our video for more information.





Water quality monitoring

The challenge - to ensure high water quality for formulating high-quality cosmetics and body care products. The Bürkert solution: the water quality can be continuously monitored in an efficient manner with our modular type 8619 analytical controller and its analysis sensors. With this simple and easy-to-use device, measurement data available at a glance thanks to digital interfaces and an easily read display including pH, free chlorine, conductivity and ORP, as well as typical sensors such as temperature, pressure, flow, level and other discrete signals. This complete unit provides consistent monitoring for high quality water.

Watch our video for more information.





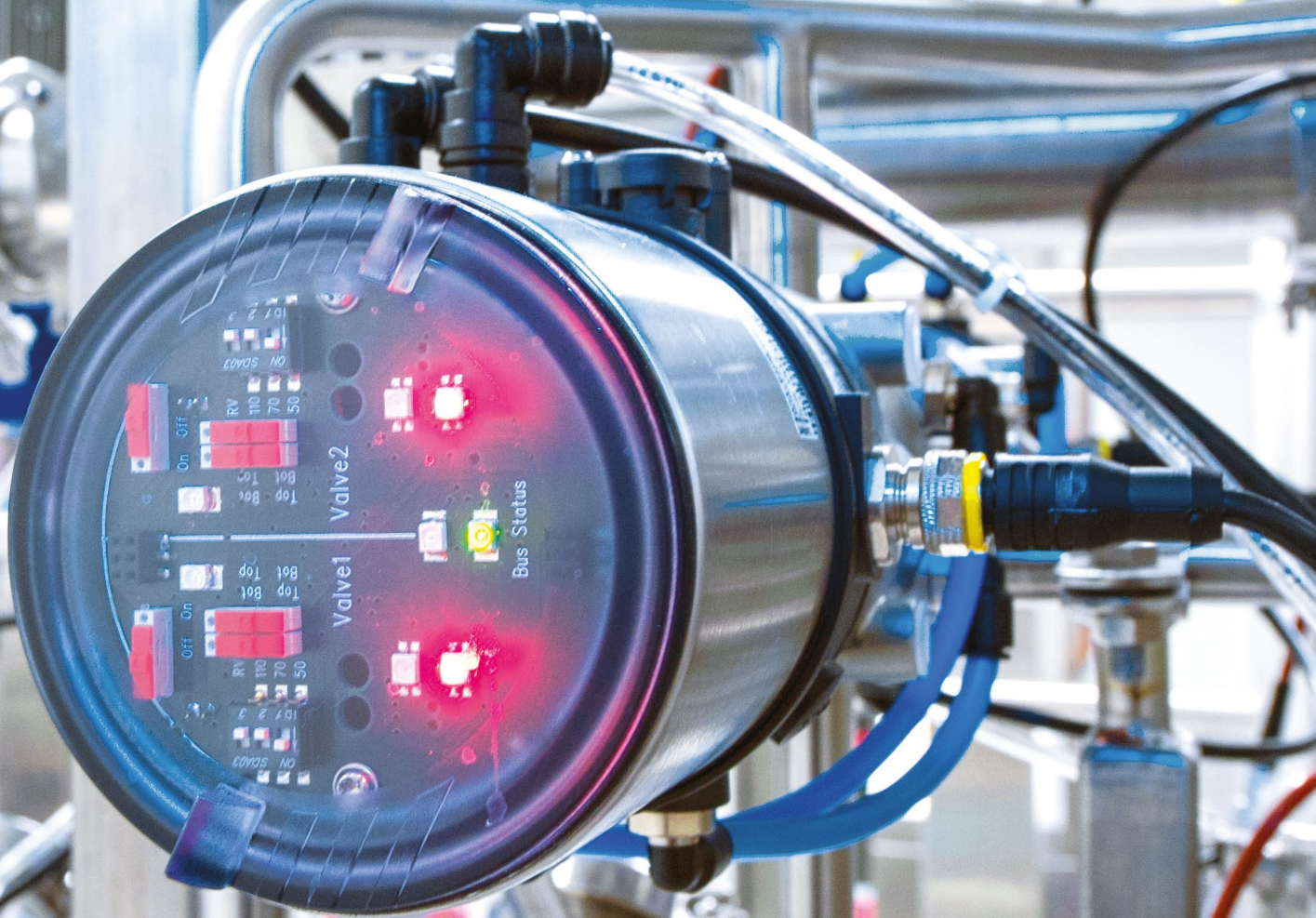
Ensure the quality of your pharmaceutical product with the help of optimum flow measurements in ultra-pure water and Clean in Place (CIP) applications

In pharmaceutical production, safe processes are the key to guaranteeing safe and effective products. Bürkert's innovative FLOWave flowmeter helps you meet US Pharmacopeia (USP), ASME BPE and Good Manufacturing Practice (GMP) requirements while increasing productivity in Clean in Place and ultra-pure water applications.

Watch our video for more information.







AstraZeneca saves time and space with Bürkert process controls

AstraZeneca revolutionize their production facilities to meet growing global demand for their products, increasing safety and efficiency for better batch process controls.

Creating a pharmaceutical manufacturing suite is a complex task that is governed by a host of standards and specifications. For the AstraZeneca manufacturing plant in North Ryde, Sydney, Australia, the decision to change its primary supplier of process control valves to Bürkert, reduced installation and commissioning costs while also improving process data availability.

The aim of this latest expansion is to fully automate and modernize the production process as well as increasing efficiency and safety - whilst also meeting the strictest pharmaceutical standards. The project involved three solution preparation suites where the active ingredient is combined with WFI and other ingredients to create a batch of medication. Once the batch has been discharged from the storage containers, either CIP or SIP processes are used to clean the production pipework and vessels, ready for the next batch.

The Project Engineer with the Capital Engineering Team, explained: "Having completed the testing procedures, we believe we are in good hands with Bürkert, which has proven itself to be a true global engineering company with an understanding and a vision of how to truly add value to process automation applications."

AstraZeneca have truly revolutionized their production facilities to meet growing global demand for their products. In partnering with Bürkert, they now have six suites either in full operation or in construction. As part of the project they've also completely automated processes for the WFI water purification production plant, clean steam, clean compressed air, nitrogen. The valued partnership has ensured that every step of the upgrade met stringent and demanding hygiene requirements and achieved pharmaceutical manufacturing facility standards.

If you're looking to develop bespoke solutions incorporating the highest level of creativity whilst being as economically conscious as possible, Bürkert offer you a place that promotes interdisciplinary and technologically autonomous work from the first idea all the way to production.

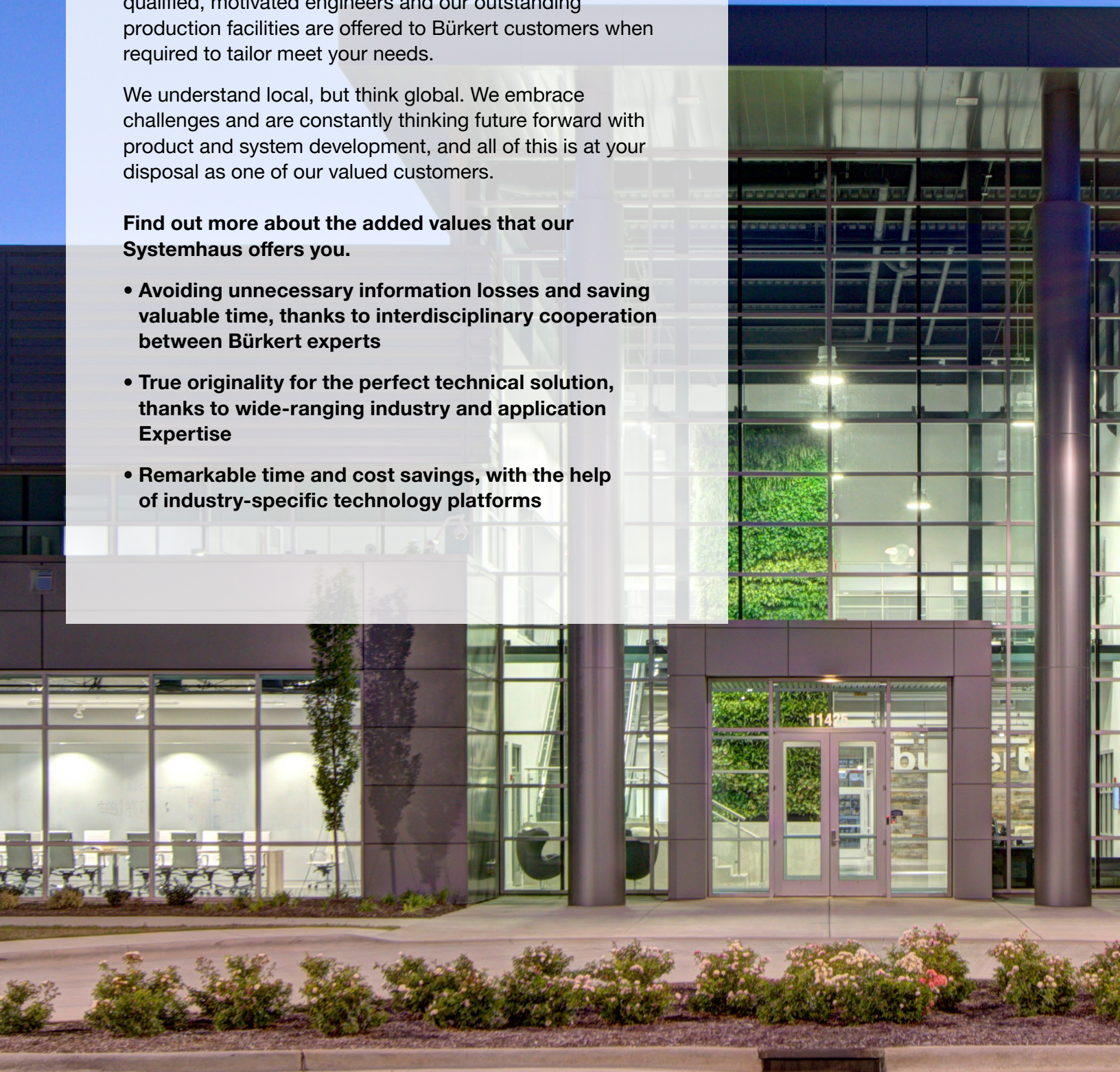
In being part of the global picture, Bürkert's experienced and trustworthy system developers all over the world are happy to assist in projects whenever required. Our highly qualified, motivated engineers and our outstanding production facilities are offered to Bürkert customers when required to tailor meet your needs.

We understand local, but think global. We embrace challenges and are constantly thinking future forward with product and system development, and all of this is at your disposal as one of our valued customers.

Find out more about the added values that our Systemhaus offers you.

- **Avoiding unnecessary information losses and saving valuable time, thanks to interdisciplinary cooperation between Bürkert experts**
- **True originality for the perfect technical solution, thanks to wide-ranging industry and application Expertise**
- **Remarkable time and cost savings, with the help of industry-specific technology platforms**

**/ Bürkert Systemhaus
– where your ideas feel
at home / Working in
partnership with you,
we develop individual
solutions that precisely
meet your expectations.**



Bürkert is the leading partner in fluid control systems

For over 70 years, we've partnered with the pharma and biotech industry, using our global presence to improve processes and future-proof our customers plants.

Strength in our partnerships stems from a comprehensive range of German designed and American manufactured products, coupled with local experience in manufacturing and engineering.

You and your needs are at the center of everything that we do. To create individual added value for you, we combine exceptional expertise with a deep understanding of you, our customer, and your application.

We make ideas flow.





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