We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS

Your partner of choice for food and beverage solutions

Networks, Technology & Bürkert Expertise

Fermentation & Tank Blanketing

Plant Utilities

Clean In Place - CIP

Process Automation

/ Enhance plant performance and save space, time and costs / In food and beverage processing, the measuring and controlling of liquids and gases demands superior instrument performance and networkability; the equipment used has to interface seamlessly. The overall mechanical process connectivity is equally as important for maintaining sterile conditions as well as optimisation of plant performance and process security. Standard connectivity with modular, decentralised monitoring, intelligence and diagnostics are the platform for flow control networks which provide reliable productivity data from your plant level network. Bürkert support Australia's largest manufacturing sector, the food and beverage industry, by offering a comprehensive and attuned range of customised products and system solutions. Bürkert gives you proven reliability, superior accuracy and virtually maintenance free service ensuring that we deliver unsurpassed total performance in the form of complete flow control loop systems.

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Process Automation

/ Intelligent concepts for tailored solutions / Automation in the food and beverage industry is always highly customised. There is no one best solution because very different priorities emerge depending on the plant configuration on the ground. Bürkert takes three different approaches to automation: centralised, decentralised and distributed. No matter how a plant seeks to upgrades, one thing is certain, product quality is crucial, whilst utilising production as efficiently as possible and avoiding unscheduled downtimes, all essential criteria when it comes to introducing new technology and processes into plants.

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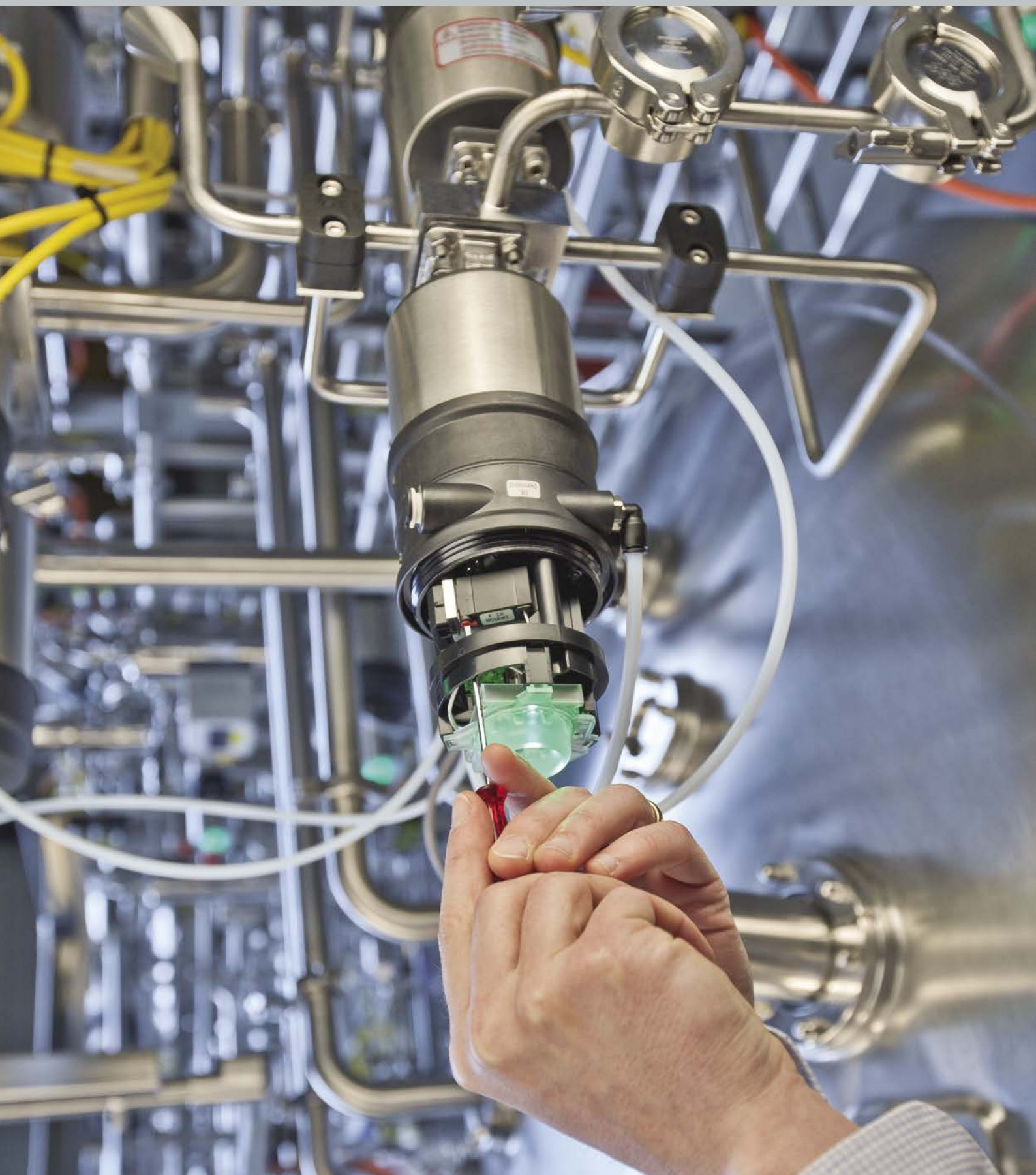
Process Automation



Centralised plant control for efficient and safe production

/ Control your plant centrally – for greater reliability / Distributed automation combines control and information at one location. Concentrating all control functions in a single room or control cabinet ensures their secure placement away from disturbing influences. This is especially advisable where the processes involved create very inhospitable conditions and a high degree of operational reliability is required. Tried-and-tested technology and components that are mutually compatible, from the control cabinet, valve island and communication module to process valves, ensure the fastest possible start-up.

Replacing valves without downtime

Always in operation: With the HOTSWAP technology developed by Bürkert, you can replace individual valves of the valve islands while your plant continues to run. Less downtime means higher productivity for you.

Avoiding rejects in case of malfunctioning

If the air is not vented quickly enough when malfunctioning occurs, valves may open unintentionally as a result of the back pressure and contaminate the product. Not with Bürkert: The check valves installed in the valve island ensure reliable production without rejects.

Guaranteeing safety for both humans and processes

The valve islands ensure peace of mind through safety-related shutdown. Bürkert solutions offer modular or channel-based shutdown – thereby preventing injuries to employees and changes to product quality.

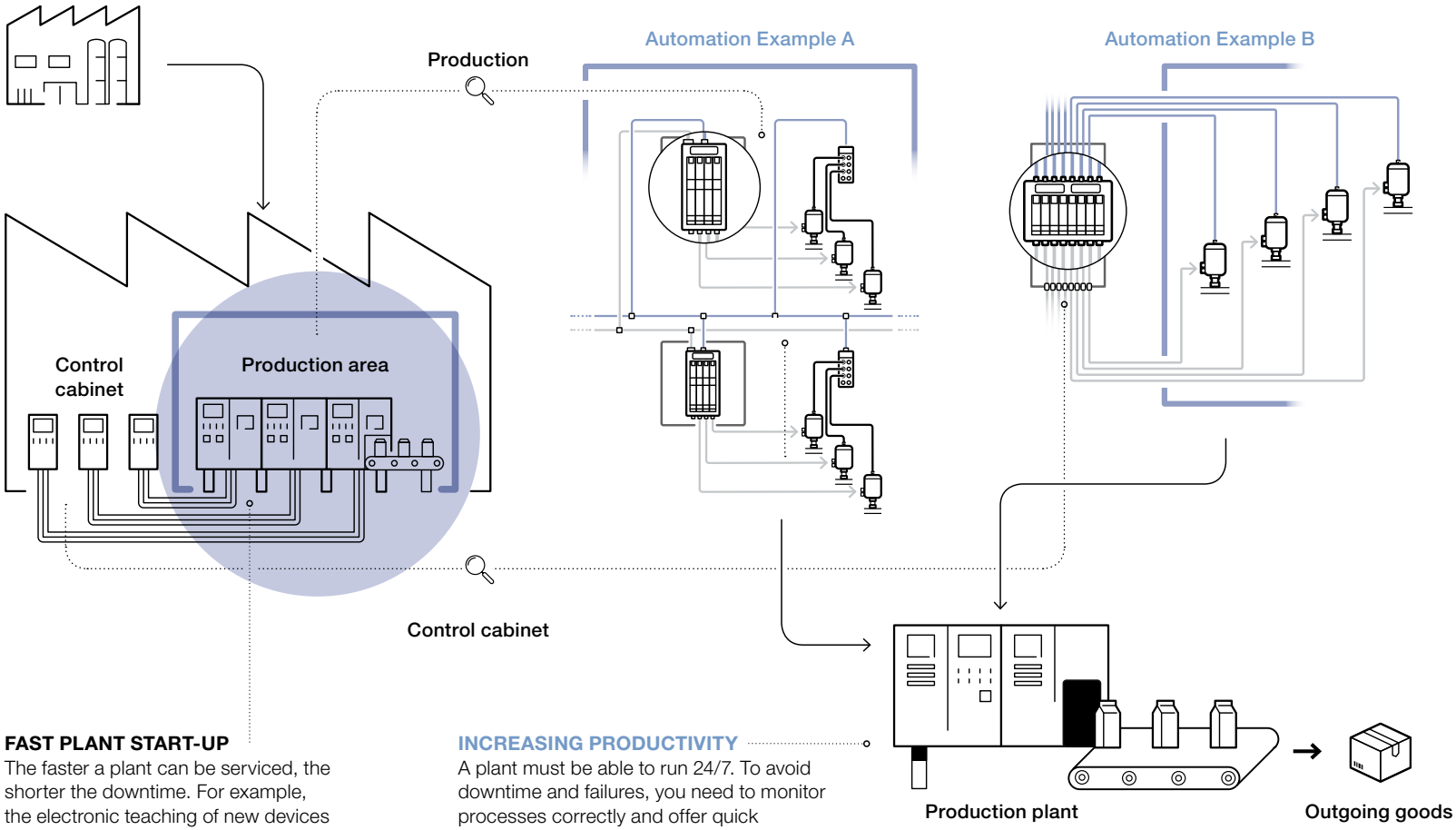
Enhancing the speed of troubleshooting

Particularly important for production in clean rooms: With a “safety centre” located outside the clean room, you can control system functions at any time without having to enter the clean room. This saves valuable time and money in case of malfunctioning.

Reducing costs with interference-free communication

Bürkert valve islands can be connected via redundant configuration R1, system redundancy S2 or a Media Redundancy Protocol (MRP). The functions ensure interference-free communication and less downtime. Meaning: Production continues safely even if a cable breaks or an inter face module fails.

/ Ensuring process reliability / The quality of your products must be guaranteed at all times – even if malfunctioning occurs. The sooner a plant is back in operation, the greater your productivity.



FAST PLANT START-UP
The faster a plant can be serviced, the shorter the downtime. For example, the electronic teaching of new devices saves you valuable time in this respect.

INCREASING PRODUCTIVITY
A plant must be able to run 24/7. To avoid downtime and failures, you need to monitor processes correctly and offer quick diagnostic assistance, if necessary.

Highest level of reliability for all plant processes

With Bürkert valve islands you always have a clear overview of the device status – for fast monitoring and diagnostics. Thanks to the redundant ring topology and protocols, your processes always run reliably and you avoid unwanted valve switching.

Simple start-up / fast maintenance

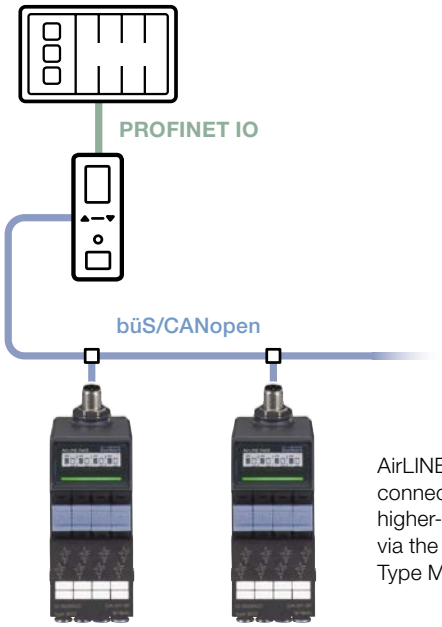
The valve islands can be installed quickly and flexibly on the wall or on a standard rail. With a visual position indicator and a robust manual override, they are easy to operate and maintain: Rely on preventive and wear-optimised maintenance.

Extensive flexibility for your plant

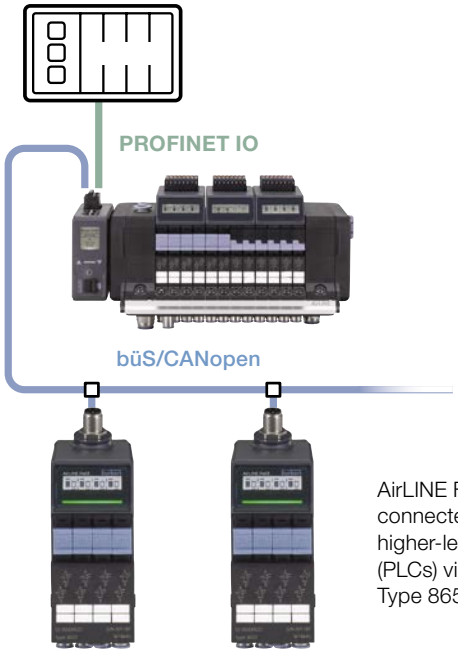
Bürkert valve islands can be installed directly in the field since they adapt to various set-ups. Needless to say, they support all important fieldbus protocols and can be connected to the Bürkert device platform EDIP.

Well protected against corrosion and unauthorised access

Bürkert device solutions are compact and available as a control cabinet or a stand-alone field module. The components are robust, easy to clean and yet protected against unauthorised access.



AirLINE Field can be connected to other higher-level controllers (PLCs) via the fieldbus gateway Type ME43 (stand-alone)



AirLINE Field can be connected to other higher-level controllers (PLCs) via the valve island Type 8652

Networks, Technology & Bürkert Expertise

Fermentation & Tank Blanketing

Plant Utilities

Clean In Place - CIP

Process Automation

Pneumatic Process Interface Centres

From the simplest banjo valve to a fieldbus enabled multichannel pneumatic valve island, we fit around your needs and can help to develop flexible interfaces between your process and your control system. The valve islands and the field devices provide easy commissioning and maintenance as well as minimised process Thanks to a wide range of communication options they are also future-proof in times of Industry 4.0.

Types 6519 6012 & 6014 Pilot Valves

It's your choice. From the simplest banjo valve to a fieldbus enabled multichannel pneumatic valve island, we fit around your needs and can help to develop flexible interfaces between your process and your control system.

Type 8652 AirLINE valve island

Especially developed for applications in process automation. Diagnostic functions can be visualised at the LC display, both in clear text as well as symbols. This makes it easy to relate to the shown messages and helps to save time during start-up and maintenance. Key pneumatic functions ensure increased process reliability, such as non-return valves in the exhaust air ducts make sure there is no unplanned actuation due to pressure peaks.

Type 8653 AirLINE field

Developed for applications in process automation, this diagnostic function can be visualised at the LC display, both in clear text and as symbols. This facilitates assignment of the displayed messages and helps to save time during start-up and maintenance. The hardware design has been optimised for installation close to the actuator. Thus, an intelligent installation system allows the valve island to be installed in a wide variety of positions. Designed for fieldbus interface: CANopen, IO-Link or büS.

Type 8647 AirLINE SP electropneumatic automation system

A modular, electropneumatic automation system consisting of connection and valve modules. Specifically developed for safe and complete integration into the decentralised peripheral system "SIMATIC ET 200SP" and "SIMATIC ET 200SP HA" from Siemens. Pneumatically operated process valves, cylinders or other components can be connected to the pneumatic outputs.

Type 8644 with Rockwell Point I/O AirLINE Quick

Ground-breaking modular system in protection class IP 20 with multiple communication possibilities including ControlNet, DeviceNet, Ethernet and Profibus DP. Fully compatible with Rockwell Point I/O. In addition to the existing solution the AirLINE Quick version helps you to traduces the number of components in the control cabinet.

Type 8644 with Wago 750 AirLINE

Remote process actuation control system AirLINE, fully compatible with WAGO I/O System 750.
It integrates high performance solenoid pilot valves, remote electronic I/O and fieldbus communication into a process actuation and control system that is both compact and extremely flexible.

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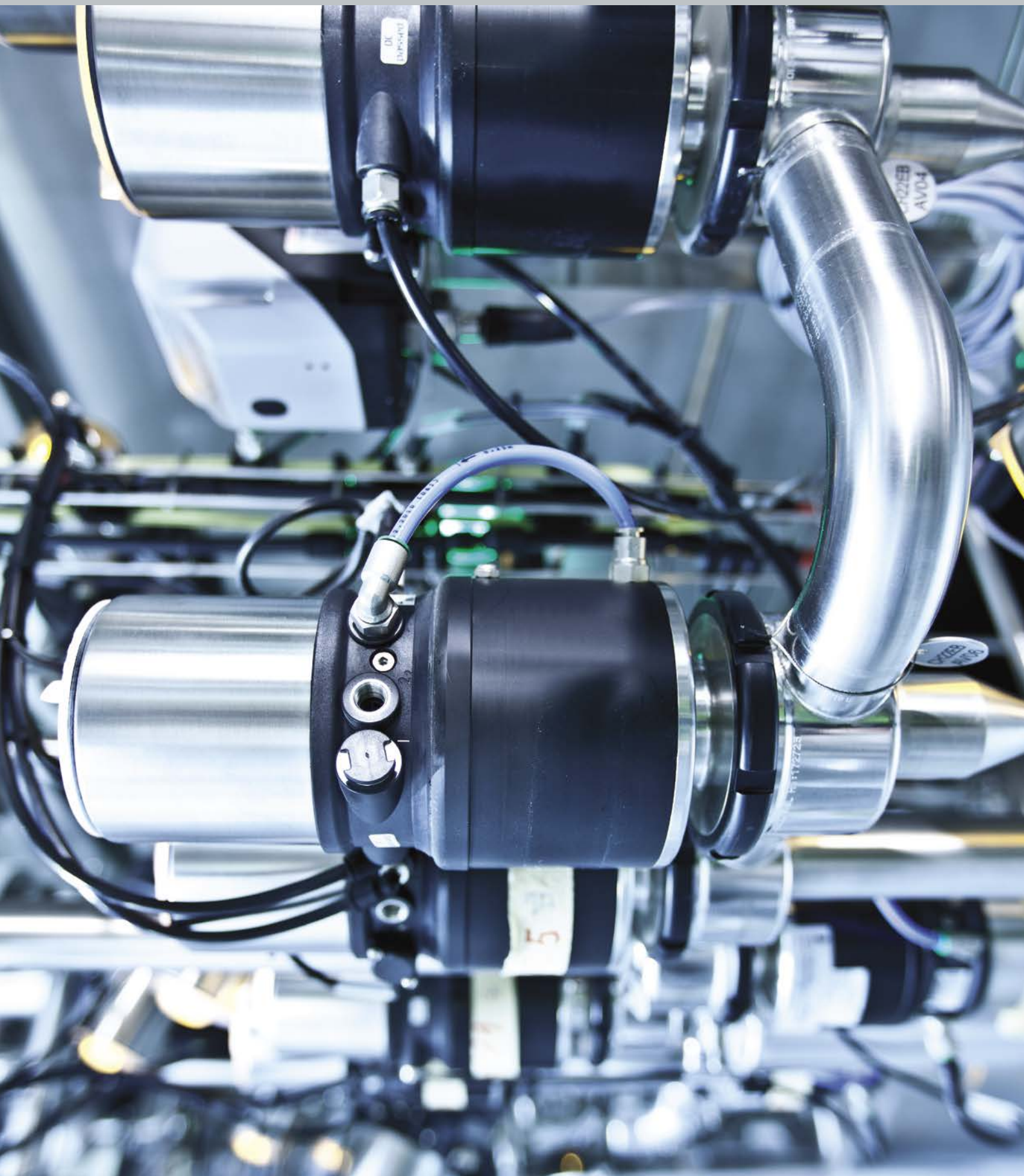
Process Automation



Decentral plant control for high-level quality and productivity

/ How harmonised are your processes? / To ensure all end products have the same high quality, your plant must guarantee correct control of all media at process level. Several hundred process valves need a reliable timer to switch properly at the right time. When using Bürkert's decentral automation solution, control heads with digital interfaces set the pace. They provide the individual valves with the necessary intelligence to work together quickly, reliably and at the exact right moment – like musicians in an orchestra. Product quality is crucial, and at the same time producers want to utilise their plants as efficiently as possible while avoiding downtime.

Maximum quality, minimum rejects

Incorrect switching? Never! Check valves integrated in the control head Type 8681 prevent incorrect switching and thus a loss of production. If the plant switches off in the event of malfunctioning, it is possible to vent a large number of process valves simultaneously. This prevents costly rejects and ensures product quality. Thanks to the diagnostic function in the control head, you are able to reliably identify the production status even after malfunctioning. In a flash, you can determine whether product quality has been adversely impacted or not.

Less maintenance costs

Bürkert valve systems are robust and durable. This is ensured by various details, including pilot air recycling, practical IP protection, internal overpressure, integrated pilot air duct and corrosion-resistant materials. The restriction function in Type 8681 prevents water hammer phenomena, protects plant technology and reduces your overall maintenance costs.

Reliable operation, predictive maintenance

Bürkert decentral process valves offer extensive diagnostic functions. Thanks to digital communication with the control level, you can use them directly – for reliable plant operation and predictive maintenance.

Identifying errors quickly

Coloured high-performance LEDs at the control heads enable process monitoring at a glance. Even in confined spaces, you can quickly identify the type of error that has occurred thanks to the clearly visible colour. This ensures the error is identified and rectified rapidly, while product quality can be determined correctly after malfunctioning.

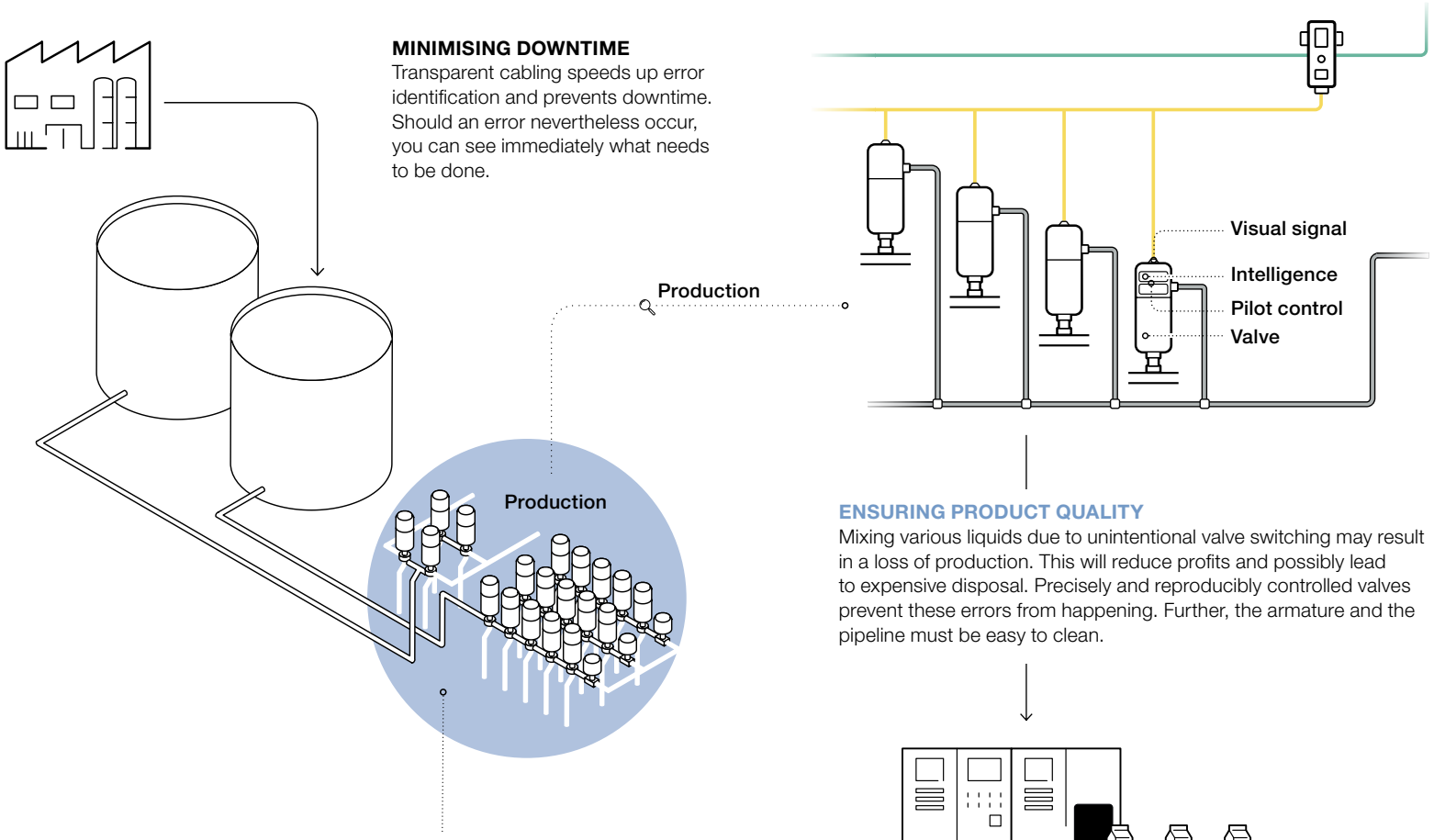
Saving energy and compressed air

The volume in the actuator of the ELEMENT (Type 8801) is extremely small thanks to the optimised product design. This saves space and, above all, energy costs, as you need less compressed air. Take a look at the example calculation at the end of this brochure.

Individual and excellent advice

Since we have expertise in all three automation concepts, we listen closely to what you want to achieve and analyse exactly what you need. If required, we combine intelligent concepts for a tailored solution. As a specialist for process automation, we offer decentralised and standardised solutions regardless of the selected system and the applied valve types.

/ Switching effectively / The faster and more flexibly your process valves switch, the more you can actually produce. Decentral automation combines the intelligent exchange of information with increased reliability and simple troubleshooting – thereby ensuing your plant runs reliably 24/7



MINIMISING DOWNTIME
Transparent cabling speeds up error identification and prevents downtime. Should an error nevertheless occur, you can see immediately what needs to be done.

ENSURING PRODUCT QUALITY
Mixing various liquids due to unintentional valve switching may result in a loss of production. This will reduce profits and possibly lead to expensive disposal. Precisely and reproducibly controlled valves prevent these errors from happening. Further, the armature and the pipeline must be easy to clean.

OPTIMISING OPERATING AND MAINTENANCE COSTS
A minimum number of hose lines reduces compressed air consumption and the risk of leakages. Since the pilot valve is located directly at the actuator being controlled, less compressed air is needed for the actual switching process.

Control head Positioner for Decentralised Automation

Bürkert offers the widest range of control heads to actuate, monitor, network, position and decentralised process control. Each component is the product of cross-functional mechanical and electrical engineering innovation. Each of the blocks is ready to be included in your complete automation strategy.

Type 8690
Pneumatic control unit

Next generation feedback for both ELEMENT and Classic actuators. Contains 2 or 3-wire mechanical or inductive feedback switches. A rugged package that will survive the toughest wash down environments.

Types 8692 8693 & 8694
Positioner and controller

Innovative positioner and controller range offers a complete automation concept for integration into the most up-to-date control systems. Designed for tough and agile process environments, particularly suited in terms of size, shape and cleanability, footprint and access code security.

Types 8691 & 8695
Control heads

A control head mixes the benefits of local pilot with feedback in one package. Bürkert has the advantage of being able to control the quality of the components inside as they are our own standard products. Add one, two or three pilot valves with mechanical, inductive or sensor pad feedback. Then plug and play.

Types 8791 8792 & 8793
Side Control positioner

The robust and compact positioner is designed to standardisation acc. to IEC 534-6 or VDI/VDE 3845 for assembly with linear and rotary actuators. The digital electropneumatic positioner Side Control can be operated with the usual current and voltage standard signals and can also be equipped with the fieldbus interface PROBUS DPV1. Additionally to the digital graphic display the valve opening is signalled by a mechanical indicator element.

Type 8681
Universal control head

Optimised for decentralised automation of hygienic process valves. Thanks to its universal adapter, it can be combined with commercial butterfly valves, ball valves, single and double seated valves. With a decentralised automation concept, the control head takes over all pneumatic actuation, feedback and diagnostic functions, including field bus communication. Easy to clean with proven electrical IP protection and chemically resistant for use in food and beverage industries.

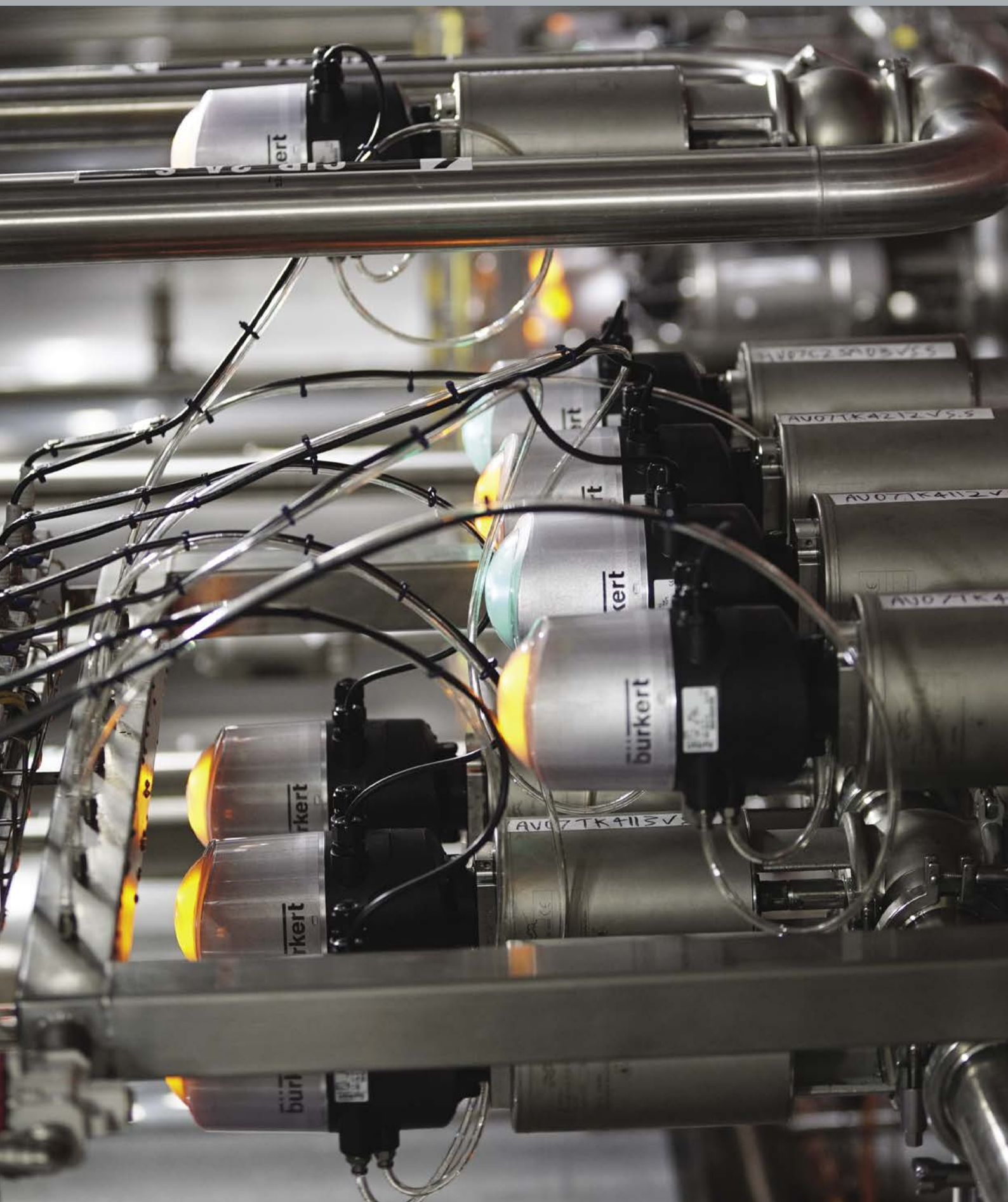
/ Technology for Clean processes / With high standards of hygiene, such as food and beverage production, Cleaning in Place is an especially important process. You must flush all pipes and tubes regularly with cleaning agents, removing bacteria, chemical and biological residue, as well as to prevent the spreading of microorganisms. Ideally, the process should have no manual disassembly or active intervention from outside. In addition, the cleaning process must be efficient, to prevent heat losses and minimise water consumption. It is therefore necessary during planning of the system to include a suitable CIP installation that meets the hygiene requirements. One of the most important factors here is the coordinated interplay of the components. With a broad product portfolio consisting of optimally compatible components, Bürkert can ensure a clean and efficient CIP solution for virtually any application.

Networks, Technology & Bürkert Expertise

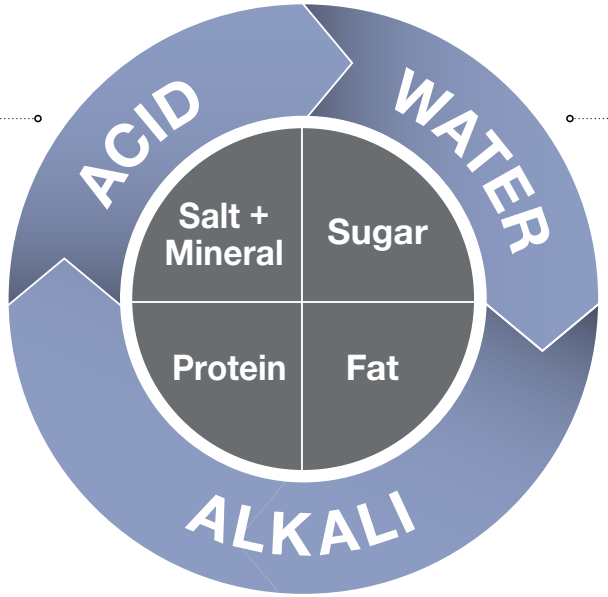
Fermentation & Tank Blanketing

Plant Utilities

Clean In Place - CIP



/ CIP Best Practice / Clean in Place systems consist of cleaning the complete pipeline circuits of a plant, without dismantling or opening the equipment. Installing a CIP system requires little to no manual involvement by an operator. The process involves jetting or spraying of surfaces or circulation of cleaning solutions through the plant under conditions of increased turbulence, flow velocity, time and temperature. Generally, the parts of the process cleaned will include everything that encounters the product, such as tanks, valves, pumps and fittings.



ACID
If the product contains salts and minerals then a suitably qualified strength of acid might be required. Acid helps to remove any scaling build-up in the pipes.

WATER
The water is used for the initial flush and clean of the system. If sugar is present you will start with a hot water flush to dissolve the sugars.

ALKALI
Most of the food products, including milk and dairy, will contain proteins and fats, therefore an alkali detergent will be required to compact that.

Type 2034
Multifunction Block and Weld Solution

The Bürkert bloc configurations are designed for the control of ultrapure, sterile, aggressive or abrasive fluids. Designed to be fully drainable and can be operated by either pneumatic actuator or manual handwheel.

Type 8840
Modular process valve cluster

Based on a modular valve body, allows different configurations with the individual parts joining hermetically tight and in a very compact way. No installation effort for pipework, fittings or seals required.

Type 2100 & 2101
Pneumatically operated 2/2 way angle seat valve ELEMENT

Optimised for decentralised process automation and fulfils tough criteria for process environments. Unrivalled cycle life and sealing integrity, this fully integrated system has a compact and smooth design, integrated pneumatic lines, and superior chemical resistance.

Type 8681
Control head

Optimized for decentralised automation of hygienic process valves. Thanks to its universal adapter it can be combined with all normal commercial butterfly valves, ball valves, single and double seated valves.

Type 2301
Pneumatically operated 2 way globe control valve ELEMENT

Each globe valve body can be fitted with up to five sizes of trim sets. These parabolic trims provide a reliable and repeatable characteristic to vary the flow. The control cones are available in either stainless steel or with a durable PTFE seal or PEEK seal for tight shut-off. Leakage class III, IV or VI are available.

Type 8098
FLOWave

Based on SAW (Surface Acoustic Waves) technology and designed for applications with the highest hygienic demands. No obstacles inside the measuring tube, compact, lightweight and low energy consumption. Ideal for liquids with low or no conductivity, with digital communication, parameter setting via Communicator, display and wifi.

Type 8619
MultiCELL multi-channel and multifunction transmitter/controller

Available in two housing variants for panel or wall mounting. A microprocessor transmitter/controller for connection of sensors that deliver raw signals for pH, ORP, conductivity and flow via pulses or sensors, delivering analogue signals. Thanks to full support of the Modbus TCP, PROFINET (Conformance Class B) or EtherNet/IP, the 8619 can be integrated into most Industrial Ethernet environments.

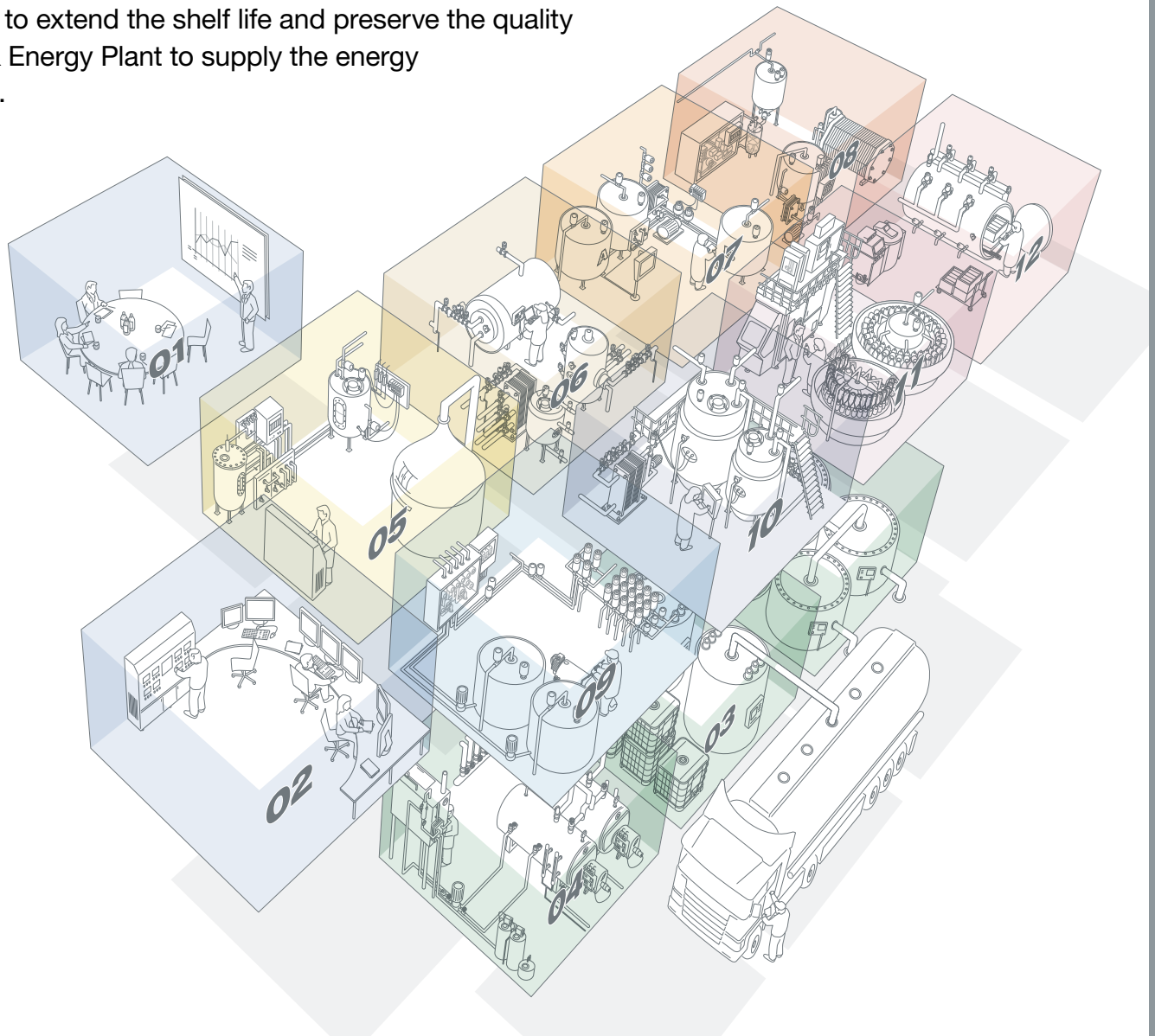
Type 8221
Conductivity sensor

Hygienic conductivity probes determine electrical conductivity in a wide range of pure or concentrated liquids. Two technologies of conductivity probes are available. The clever design guarantees an excellent linearity over the entire measurement range. An integrated temperature sensor (Pt1000) is a standard feature of all versions. The probe has to be connected to the multiCELL transmitter/controller Type 8619.

/ The journey to plant modernisation / Sustainable plant modernisation is an expectation of Australian food and beverage producers. Bürkert's fluidics experts work with a number of industries to support this upgrade culture. By visualising a plant by sectioning each process individually, we're able to break down the key areas where fluidic challenges may be experienced. In Plant Utilities we refer to the equipment not used in the direct manufacturing process, but components that are needed to facilitate the processes. Sufficient control, measurement and reporting of Plant Utilities is critical to every part of the manufacturing process.

Typical Plant Utility sub-processes

Boiler and steam for heat generation for applications such as HEX with in the CIP circuit. Cooling for use with Glycol and chilled water applications. Water Treatment applications to generate water to the correct quality or to re-use and recycle. CIP to ensure that wherever purity and cleanliness have to be strictly monitored the processes meet the required standards. Nitrogen for tank blanketing to extend the shelf life and preserve the quality of the end products. Compressed Air & Energy Plant to supply the energy required to run the manufacturing plant.



Factory Key

1 Board Room
2 Control Room
3 Delivery & Dispatch
4 Boiler House
5 Fermentation
6 Heat exchanger
7 CIP/SIP
8 Filtration
9 Batching
10 Cooking
11 Filling
12 Sterilisers & Autoclaves

Motorised Process Valves

/ Innovation meets process / The advantages of electromotive drives are getting more attention in process automation. As simple, intelligent systems they offer diverse opportunities for process optimisation and cost savings. With the electromotive seat valve options, Bürkert offers a complete process valve that sets new standards with respect to performance, reliability and cost-effectiveness.

Type 3360
Electromotive 2 way angle seat control valve

This innovative process controller is the solution when it comes to control tasks under demanding operating conditions. The fieldbus provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

Meeting modern standards

VA sets a new standard for electric on/off and modulating process valves.

Fast reaction times

Electromotive drives compared to pneumatic drives, approaches the desired position without delay and without overshooting.

Highest level of reliability for plant processes

Increased plant productivity with expanded diagnostic and predictive maintenance capabilities.

Saving energy and compressed air

Reduced energy consumption & demand on air compressors with motorised solutions.

Maximum quality and repeatability

They offer outstanding control resolution and repeatable accuracy with no compressed air consumption ever.

Extensive flexibility for your plant

Smart & Industry 4.0 compliant with Fieldbus protocols of Ethernet IP, Profinet & Modbus available.

Water Quality Monitoring

/ Everything at a glance / Process monitoring plays a crucial role in food and beverage manufacturing. Applicable regulations are in place to ensure high water quality must always be observed. Many plant operators therefore monitor their treatment process continuously. Bürkert's Online Analysis System makes this task very easy and ensures you have a clear overview of your water and your performance figures at all times.

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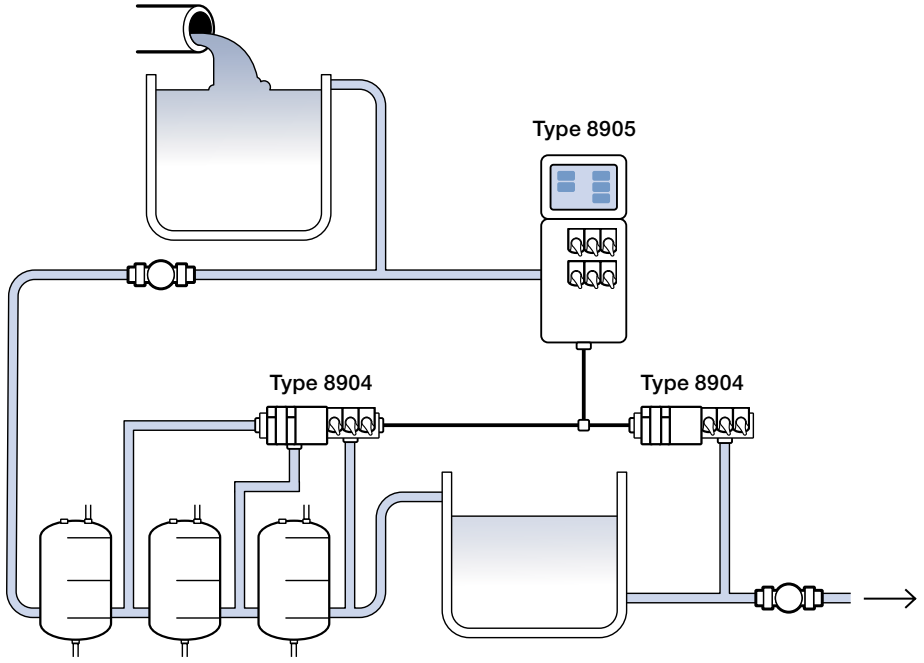
Fermentation & Tank Blanketing

Plant Utilities

/ Monitoring and analysing water online / **Bürkert's Online Analysis System Type 8905 provides you with a space-saving and safe solution. It allows you to monitor all key water parameters with just one system – continuously, precisely and with low maintenance.**



Maintenance

Thanks to the technologies applied in the individual sensor cubes, there is significantly more time between maintenance intervals. Less maintenance means more time saved.

Continuous monitoring

Thanks to the PLC connection, you always have an overview of all the measurement data whenever and wherever you need it.

Keeping water quality under control

Manual sampling is so yesterday: Today, simply program the measuring solution according to your needs and receive measured values continuously.

Minimum workload

Automatic measuring reduces your workload enormously. A high-resolution 7” touchscreen ensures intuitive operation and clear visualisation.

Hot-Swap technology

Simply remove sensor cubes for maintenance, even during operation. This reduces downtime.

Documentation

Due to continuous control and data storage, you can rely on secure and easy-to-document process flows.

Easy water quality measurement

Type 8905 covers all key parameters in just one system: Chlorine, chlorine dioxide, pH, ORP, conductivity, turbidity and iron.

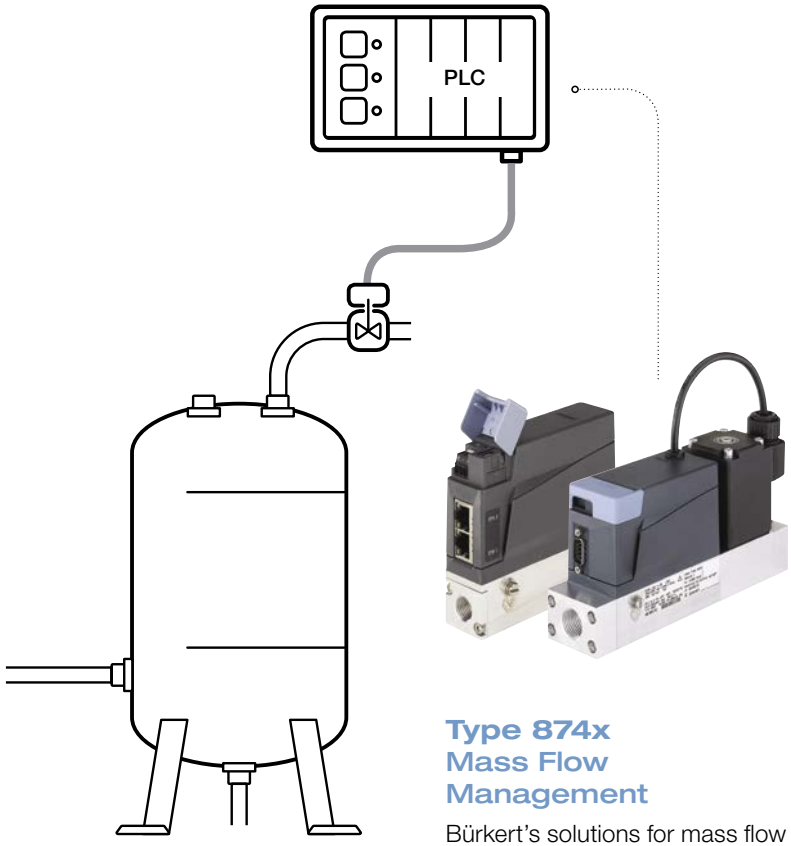
Sustainable processes

The Online Analysis System is environmentally friendly and sustainable in operation thanks to its low water consumption.

/ Is the pressure in the tank correct? / Food and beverage producers are familiar with this challenge: If specific liquids are stored in tanks, the atmosphere in the tank head must be carefully regulated. The reasons for this are numerous but the risks abundantly clear – errors lead to the loss of valuable product and will cause you, the plant operator, to incur costs. In processes such as fermentation, organisms in the tank are continuously 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.

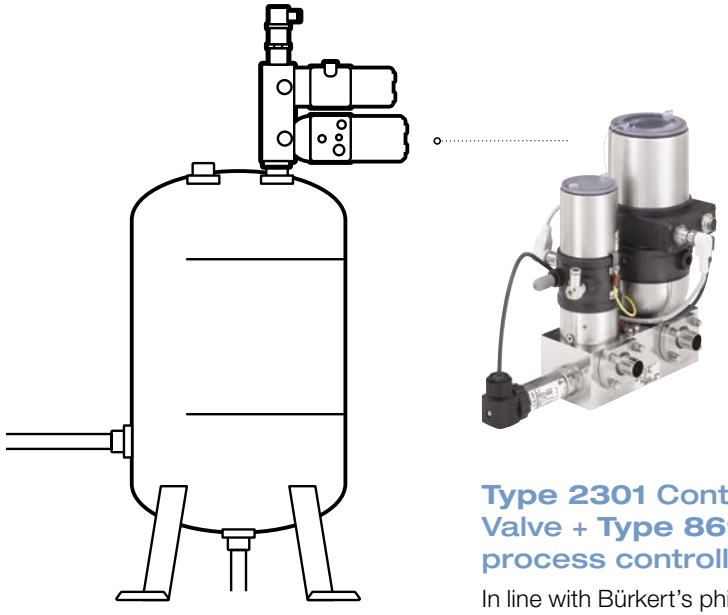
Networks, Technology & Bürkert Expertise

Fermentation & Tank Blanketing



Type 874x Mass Flow Management

Bürkert's solutions for mass flow management of gases is suitable for a wide range of applications and available with Industrial Ethernet, analogue or fieldbus interfaces. Up to four different gas calibrations can be stored in the device. The thermal MEMS sensor is located directly in the gas stream and therefore reaches very fast response times. These units are compact, with nominal flow ranges, offering high accuracy and repeatability.



Type 2301 Control Valve + Type 8693 process controller

In line with Bürkert's philosophy the construction of the Type 2301 globe valve fulfil tough criteria for process environments. Unrivalled cycle life and sealing integrity is guaranteed by the proven self-adjusting spindle packing with exchangeable V-seals. Paired with Type 8693 Digital electropneumatic process controller, provides a compact and robust solution for food and beverage gas control in tank blanketing.

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 if the tank is moving.

Precise filling

No matter how full or empty your tank is: The pressure on the product can be so finely adjusted that a precisely dosed volume is filled at all times.

Reduced maintenance workload

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

/ Leading the way in intelligent networking / **Bürkert leads the way in networked automation solutions. Driven by the movement of mass production and process automation throughout industries, we aim to simplify and provide peace of mind by offering reliability in both fit-for-purpose products and support.**

Bürkert provide a number of gateway and networked options for customers with adaptable and integrative product and technology. As world leaders in supporting core and essential industries, continual innovation is imperative to meet growing demands.

Networks, Technology & Bürkert Expertise

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.

Bürkert Australia 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.

/ Local pacific teams / Since 1980, Bürkert has shown its commitment to bringing the highest level of quality and service to Australia and New Zealand.

Bürkert maintains a highly trained staff that is on hand to answer technical needs - from one-off basic solenoid valves, to comprehensive networked systems.

Bürkert Australia HQ is located in Sydney, with large branch offices in all states, including some regional centres.

Bürkert in New Zealand has its headquarters in Auckland and maintains presence throughout both the North and South Islands, serving Trans-Tasman customers.

Wherever you are, Bürkert will be there to ensure you get the very best technical solution.

We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS

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