

WE LEARN FROM YOU EVERY DAY –
AND THINK OUTSIDE THE BOX.

Process automation with ingenuity

Intelligent concepts for individual solutions

When it comes to dealing with liquids and gases, Bürkert has become a sought-after partner all over the world. Why? Probably because we have been learning for and from our customers for more than 70 years now. This enables us to always think that crucial step ahead and around the bend.

For your added value. Let us prove it to you – we look forward to your challenge.

We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS

Bürkert Fluid Control Systems

Christian-Bürkert-Straße 13–17
74653 Ingelfingen
Germany

Tel.: +49 7940 100

Fax: +49 7940 1091204

info@burkert.com

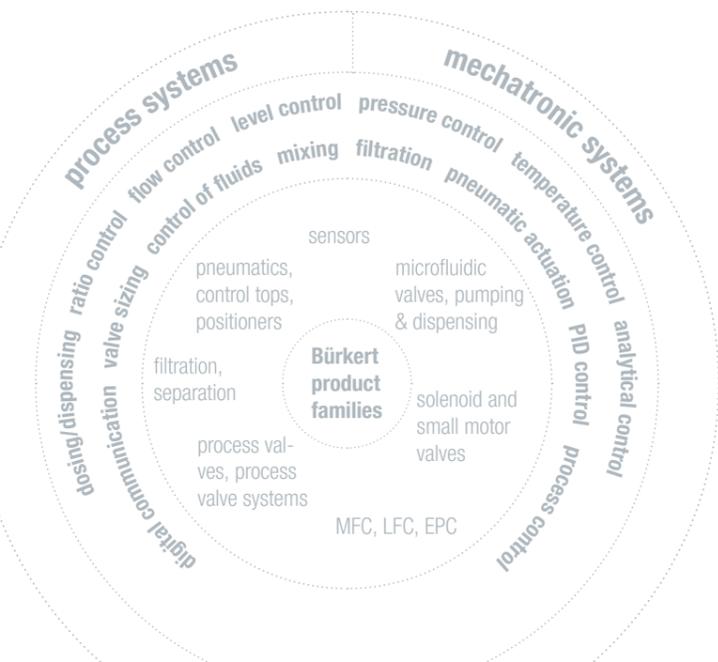
www.burkert.com

WE SPEAK YOUR LANGUAGE – FLUENTLY.

We love a good challenge. That is because we are simply fascinated by everything that flows. No matter if our customers require solutions for measurement, control or both – we always find unconventional ways of developing individual solutions.

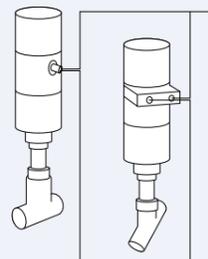
Whether it is about flow, level, pressure, dosing, analysis, filtration, temperature, mixing or the automation of processes – liquids and gases have to be measured and controlled. These are the fundamental fluidic variations upon which industrial process technology is based, and Bürkert's specialty with its expertise and entire range of solutions and services.

What makes us special? At Bürkert, we start with your fluidic challenge and draw on the basic physical principles. This way we make use of the fluidic relationships and our experience with physics, duplicating them across the most diverse applications and industries and hence solving the same or similar challenges. You in turn benefit from a deep pool of expertise, which we accumulate from multiple industries and apply individually to your needs. For the ideal solution to your specific challenge.



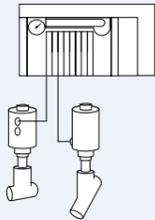
INTELLIGENT AUTOMATION – FOR INDIVIDUAL REQUIREMENTS

Why does our competence in finding automation solutions stand out from the crowd? Right from the start, we take all the various automation options into account, we listen carefully to what you have to say and then provide the advice that suits you best. This provides you with an objective analysis and evaluation of your plant and planning circumstances, which results in an individually tailored automation solution. It is also possible to combine different intelligent concepts – the main aim is to satisfy your specific needs and requirements. This is how you profit from Bürkert's objective evaluation and solution-finding competence from the beginning right to the end. And you have a partner who is on your wavelength.



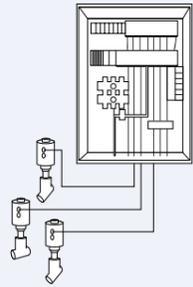
Decentral automation

The diaphragm and process valve systems of the ELEMENT series are ideal for straightforward and flexible solutions. The intelligent, fast-acting process valve systems also help to keep processes lean.



Distributed automation

The flexible combination of complete control cabinets, CLASSIC process valves and the AirLINE valve island series is ideal for safe, close-to-process installation. The interaction of components enables compact solutions based on control cabinets or pneumatic field modules, which can always be extended as needed.



Central automation

Concentrating all equipment at a single location can be done easily and quickly with mutually compatible components. Proven technology – control cabinets, valve islands, communication modules and CLASSIC valves – work together to provide highest levels of reliability.

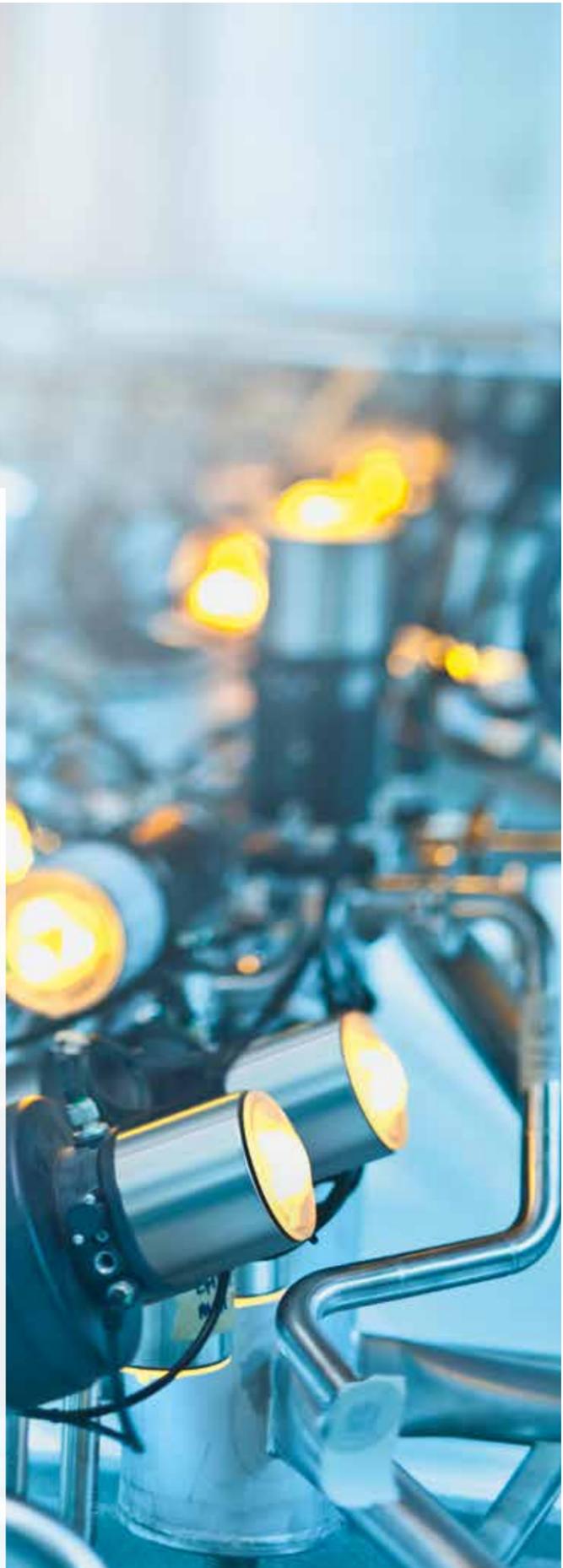
DECENTRAL AUTOMATION INTELLIGENT PROCESS CONTROL

Decentral automation can have significant advantages regarding monitoring, flexibility and safety, even with complex projects. If local access to information and valves is required, decentral automation offers many further benefits: The basis is formed by flexible process valve systems that make for lean automation processes and straightforward cabling and piping. This shortens planning phases and makes the plant design more transparent, saving time and money in the installation phase and ensuring a fast start-up. Operation is efficient and economical thanks to the fact that switching intervals are short, with practically no delay times.

In addition, the combination of intelligent information exchange via direct messaging and status diagnosis, greater reliability thanks to clear-cut process monitoring architecture and easy troubleshooting all speak for themselves. LED displays ensure that switching statuses are clearly visible even from a distance. The components can also be cleaned easily and are suitable for thorough washdowns.

YOUR ADDED VALUES

- Reliable, clear process monitoring
- Hygienic design for optimal cleanability
- Reduced energy costs
- Fast start-up, easy maintenance



“Of all the companies that tendered, Bürkert was the only one that could provide a specialist team for each individual technology that was specified. They brought comprehensive demonstration equipment and also invited us to see their technology in use at one of their client’s installations.”

Olivier Gilles,
Technical Project Manager, Novo Nordisk
Chartres (France)

EASIER OPERATION AND BETTER PRODUCTIVITY WITH DECENTRAL AUTOMATION

For the installation of a completely new production line for insulin vials, the Danish pharmaceutical company Novo Nordisk needed an automation concept that simplified the processes and operating, while also optimising productivity. To find out how to achieve this, Novo Nordisk consulted Bürkert and then chose a decentral automation solution that only required a single common compressed air supply. The decisive factor here was the way the various components interacted so efficiently.

These components combine their various characteristics to form a very clever solution for the production line. The basic components of the solution are the process valves and diaphragm valves of the ELEMENT series, because they are equipped with easily visible, high-performance LED status displays. They can still be readily seen in restricted spaces. It proved possible to install a clear-cut and efficient system with the aid of robust sensors with

large measurement ranges. The existing plant and special requirements were taken into consideration right from the start. This represents a major advantage that could be exploited thanks to Bürkert’s competence in solution-finding and its flexible components.

AT A GLANCE

| | |
|---------------------|---|
| Company | Novo Nordisk Pharma GmbH |
| Application | Production of insulin, automation and control |
| Requirements | Straightforward, more productive processes |
| Solution | Decentral automation |
| Added value | Optimised usability, improved productivity |

DISTRIBUTED AUTOMATION FOR THE RIGHT AMOUNT OF PROCESS CONTROL

If the plant configuration requires valves to be close together, or plant sections to be flexibly configured, distributed automation represents the ideal solution. The individual components such as the control cabinet or field module and CLASSIC process valves harmonise perfectly, and this simplifies the planning and engineering work required thanks to their intrinsic compatibility and the fact that the whole platform is prequalified. Fast reaction and supply times, support and assembly services are there to make sure the installation goes smoothly and the plant is ready on time.

The plug & play solutions can be configured quickly and easily, they are fully inspected and documented and allow for immediate start-up. The control cabinets and pneumatic field modules are designed to cope with locations close to the operating plant. What's more, your automated solution can easily and quickly be extended at any later date.

YOUR ADDED VALUES

- Less engineering needed
- Compact solution with control cabinet or stand-alone field module
- Reduced costs thanks to shorter distances
- Compatible with all common communication standards
- Robust and easy to clean



"We still find it somewhat difficult having to use detergents and high-pressure cleaners on the valve islands. However, we noticed a long time ago that these necessary cleaning procedures have no adverse effects on them!"

Tim Borgstaedt,
Deputy Head of the Preparation Department at FrieslandCampina in Gutersloh (Germany)

CLOSE-TO-PROCESS, EFFICIENT AUTOMATION IN HYGIENE-SENSITIVE ENVIRONMENTS

The most important factor for modern dairy plants such as FrieslandCampina in Gutersloh (Germany) consists of complex monitoring and control systems for liquid media. A new production line required a flexible and efficient automation solution capable of reliable processing of 300,000 litres of fresh milk daily and precise controlling of nearly 2,000 pneumatic process valve. There is no way to do this without intelligent automation. To date, the valve islands for controlling pneumatic actuators had to be installed at a considerable distance for hygienic reasons. To solve this problem, FrieslandCampina consulted Bürkert and decided to go for a more flexible plant design. Bürkert was able to optimise the operation thoroughly by means of a distributed automation solution with installations close to the process.

The symbiosis formed by the AirLINE valve island series with the hygienic design cabinets opened up new options for a more flexible installation – even where hygienic

conditions are essential. This meant that the distances between valve islands and actuators could be significantly reduced: In some cases distances of 20 to 50 metres could be reduced to 5 metres. For the installation and operation, this meant obvious benefits in terms of time and costs. In addition, the hygienic design enclosures can withstand more aggressive cleaning agents, allowing for optimal standards of hygiene to be maintained.

AT A GLANCE

| | |
|---------------------|--|
| Company | FrieslandCampina |
| Application | Milk processing, automation and control |
| Requirements | Flexible and efficient automation solution |
| Solution | Distributed automation |
| Added value | Close-to-process installation, extremely hygienic production, efficient and flexible process control |

CENTRAL AUTOMATION AT THE HEART OF YOUR PROCESS CONTROL

Central automation is the classic solution for process control; here control functions and information are all concentrated at one point. Tried-and-tested technology and components that are tuned to work with each other – from the control cabinet, valve island and communication module to CLASSIC valves – for the fastest possible commissioning. The components can be configured easily, are 100% tested and fully documented so that nothing can get in the way of straightforward installation.

Concentrating all control functions in a single room or control cabinet ensures their secure positioning away from disturbing influences. This is especially advisable where the processes involved create harsh conditions and a high degree of operational reliability is required. Pilot valves can be replaced while the plant is still operating, so it remains available all the time. Central process control also makes it easier to maintain an overview of what is going on, and extensions are easily carried out.

YOUR ADDED VALUES

- Everything in one place
- Protection against corrosion and unauthorised access
- Tried-and-tested technology for optimal operational reliability
- Modular assembly for individual solutions



“Due to the precisely controlled oxidation we now have significantly less iron in the treated water tank. This also eliminates the subsequent use of disinfectants, which is good for us and the environment.”

Bernd Rengers
Everswinkel Municipal Utilities Waterworks Supervisor

OPTIMAL PROCESS CONTROL THROUGH PROVEN AUTOMATION

In many waterworks, precisely controlled drinking water treatment is still dependent on just one factor: the experience of the plant supervisor. Specifically, on his or her experience in setting the dosing of the oxidation air manually. Exact dosing is essential to prevent the limit values laid down by drinking water regulations being exceeded. If they are, there is a danger of problematic deposits forming in pipelines and armatures. The task at hand, therefore, was to automate the supply system and concentrate the technology in one place. With the aim of helping waterworks supervisors and simplifying the oxidation procedures, Bürkert teamed up with specialist planners and drinking water experts to develop a comprehensive solution including central automation.

All the technological components for the filter control are contained in special stainless steel pneumatic cabinets supplied by Bürkert. This means that the entire automation

system for several filter containers and control equipment for over 20 armatures are concentrated at a single location. The control cabinet is also the connecting link between the PLC system and the armatures. With this state-of-the-art system, Bürkert supplies reliable solutions going beyond the central automation option.

AT A GLANCE

| | |
|---------------------|---|
| Company | Everswinkel Municipal Waterworks |
| Application | Drinking water treatment, automation and control |
| Requirements | Automated dosing, clear layout for filter control plant |
| Solution | Central automation |
| Added value | Reliable and precise dosing, secure and compact plant |

PRETTY PRACTICAL — 3 SMART CONCEPTS FROM ONE SUPPLIER INDIVIDUAL AUTOMATION SOLUTIONS FOR YOUR REQUIREMENTS

A great deal needs to be taken into account when it comes to planning, installing and operating automated solutions. That is why it is very valuable to have a partner who really understands what you need. With the aim of finding the best and smoothest automation solution, we provide you with objective and open advice after exact analysis of the prevailing conditions and requirements. Hence according to circumstances, either one of several concepts can be selected – or several can be combined. You will be able to assess which of the solutions suits you best on the basis of the overview that we have drawn up.

DECENTRAL AUTOMATION

When is this concept right for your needs?

- Layout clarity, flexibility and safety required
- Information to be available locally
- For complex plants

What are the special benefits of this solution?

- Targeted and straightforward process monitoring
- Simple installation and transparent system design
- Economic operation through efficient compressed air supply



What are the added values in your case?

- Reliable, clear process monitoring
- Hygienic design for optimal cleaning capacity
- Reduced energy costs
- Fast start-up, easy maintenance
- Short design phases
- Simplified engineering
- Clear cabling and piping concept
- Fast-switching valves

DISTRIBUTED AUTOMATION

When is this concept right for your needs?

- High spatial concentration of valves
- Flexible design for plant sections
- Solution can be extended easily and quickly at any time

What are the special benefits of this solution?

- Small control cabinet or field module close to process
- The individual components such as control cabinet or field module and CLASSIC process valves are ideally suited to each other



What are the added values in your case?

- Less engineering, shorter distances
- Compact solution with control cabinet or stand-alone field module
- Compatible with all common communication standards
- Robust and easy to clean
- Proven plug & play solutions
- Fast and easy configuration
- Comprehensive inspection and documentation

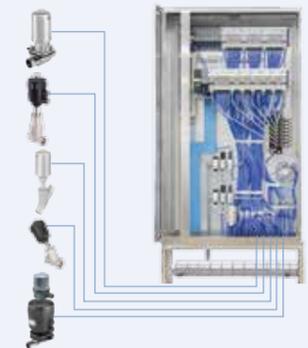
CENTRAL AUTOMATION

When is this concept right for your needs?

- Central concentration of pneumatic control equipment
- Isolated installation due to difficult environment and regular washdowns
- Access restriction

What are the special benefits of this solution?

- Everything in one place – valve islands in larger control cabinets
- Proven technology and components that are designed to work with each other – from the control cabinet, valve island and communication module to CLASSIC valves



What are the added values in your case?

- Everything in one place
- Protection against corrosion and unauthorised access
- Tried-and-tested technology for optimal safety
- Modular assembly for individual solutions
- Reduced engineering costs thanks to prequalified platforms
- Fast and easy configuration
- Comprehensive inspection and documentation