



High precision control without compressed air

ENERGY-EFFICIENT PROCESS CONTROL
WITH ELECTROMOTIVE VALVES

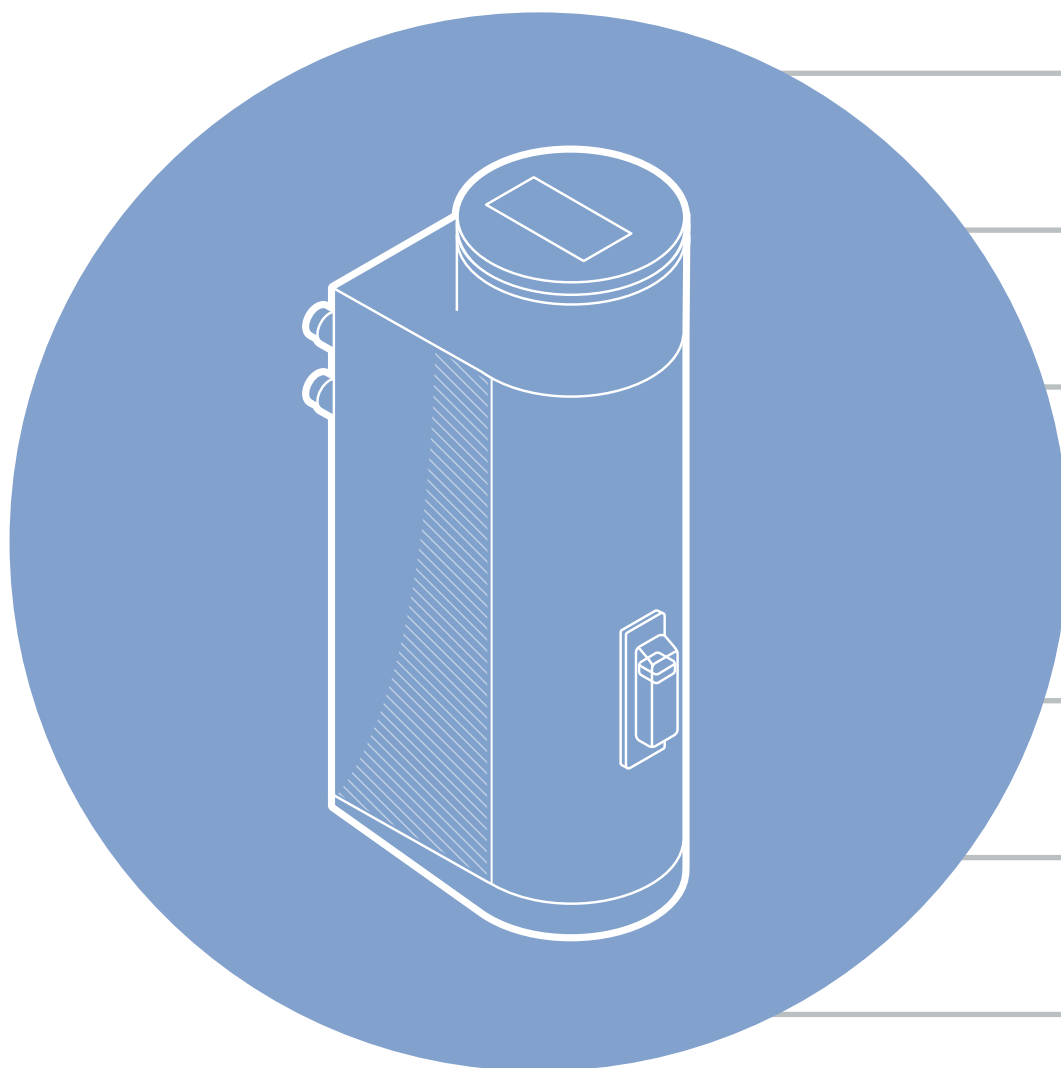
We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS

Precise and cost-effective control without compressed air

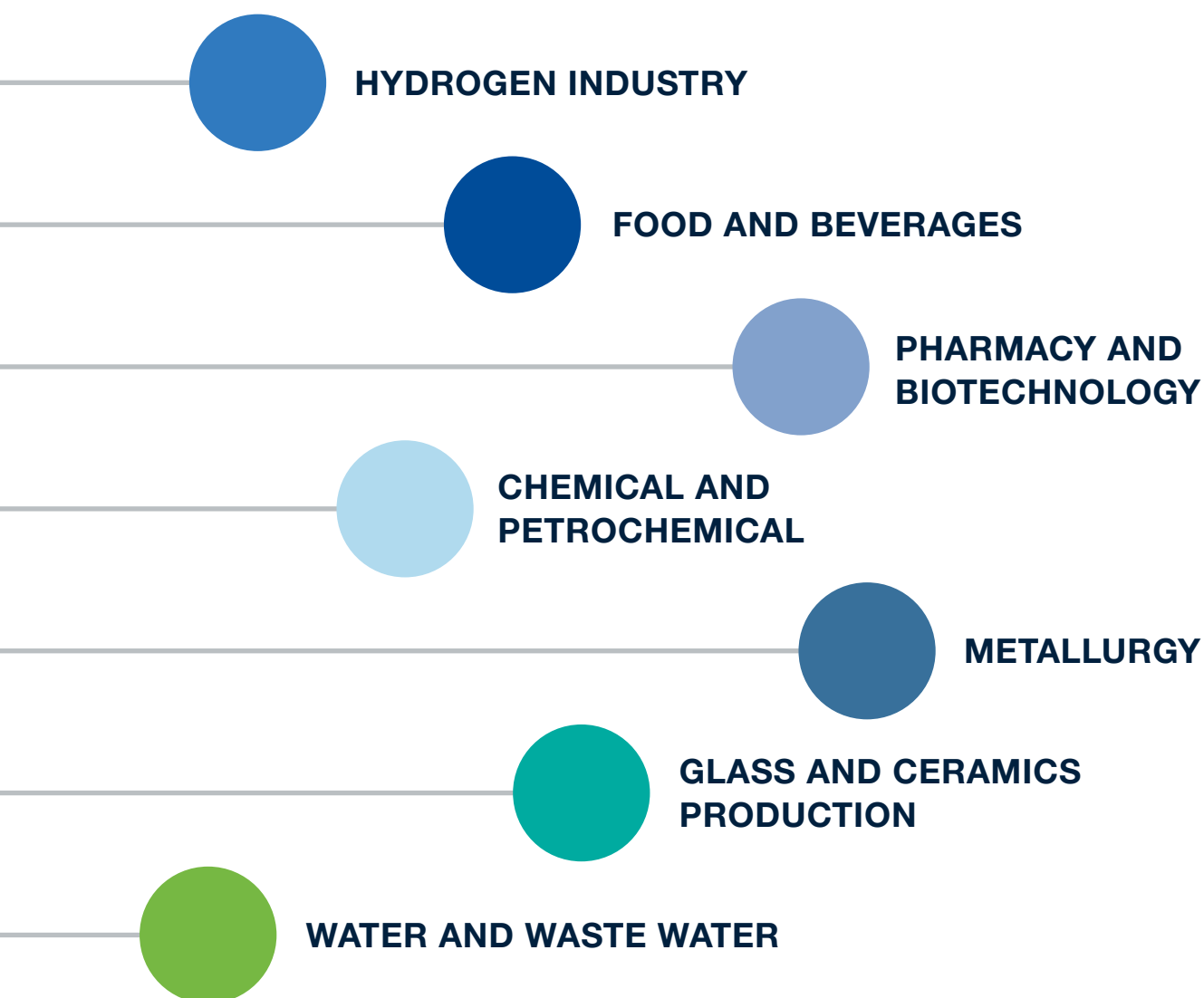
A compressed air infrastructure is not available everywhere.

Compressed air is also expensive as a medium for controlling valves, energy losses during generation and distribution push up costs. Bürkert has the perfect alternative with electromotive process control valves: they guarantee stable processes under optimal operating parameters, they control quickly, precisely and with high repetition accuracy, are energy-efficient and safe.



Built for the future

Electromotive process control valves by Bürkert are equally suitable for high and low volume flow rates of liquids and gases. They are constructed to be food-compliant and explosion-proof. Integrated energy storage ensures that a set safety position can be approached at all times in the event of a power failure. Smart diagnostics tools quickly identify error sources and make maintenance easier. Thanks to smart communication interfaces, the valves can easily be integrated into existing industrial systems.



From idea to series

When it comes to sustainable solutions for your individual requirements, Bürkert is your partner. Our experienced teams combine the necessary know-how from applications, development and series production.

We will support you throughout the entire value chain – from the first idea to start-up and controlled operation. We can therefore ensure maximum cost savings and process reliability. With our high vertical range of manufacture, we can support with a quick time-to-market.



Idea & concept

- Demonstrably creative, quick, reliable and economical
- With guide price offer and project plan

1

System development

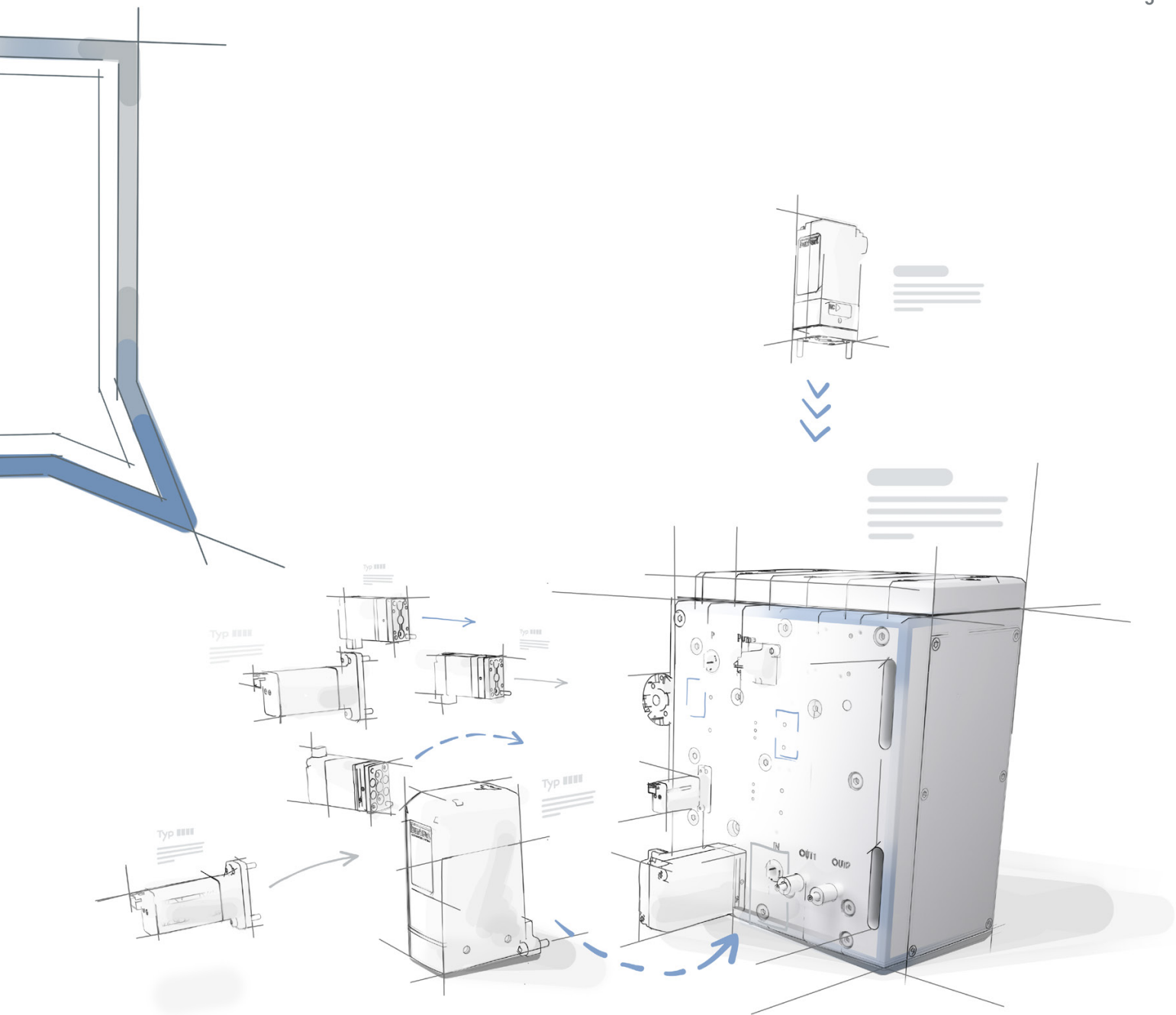
- Series design
- Pilot series and tool production

3

Prototyping & simulation

- Prototype and design
- Specifications
- Series offer

2



System implementation

- Implementation logistics
- Production handover

4

5

6

System & process qualification

- Pilot series
- Preparation for series production

Controlled operation

- Customer training
- Installation and start-up

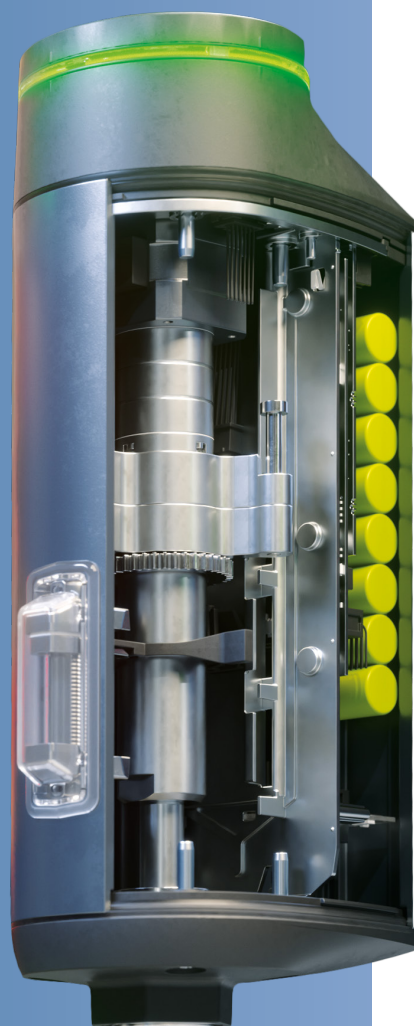




**“FREE
YOURSELF
FROM
EXPENSIVE
COMPRESSED
AIR.”**

The valve actuator that functions without compressed air

Highly dynamic and precise:
With electromotive valve actuators,
you can save energy and reduce
media losses to a minimum.



The electromotive actuators by Bürkert make compressed air redundant. This does not only reduce operating costs in the long run, but also significantly reduces installation, start-up and maintenance expenditure. There is no need to install a pneumatic controller, positioner and process controller are already integrated into the actuator. Thanks to the closed structure, hygienic requirements will be met optimally – even under harsh ambient conditions.

REDUCE COSTS BY OVER 90 PER CENT

With electromotive operated process valves, you can control media flows more precisely, more dynamically and, in particular, while saving more on operating costs than with pneumatically controlled valves.

The shock and vibration-proof actuator by Bürkert stays in the control position approached without current, and does not require any holding energy in a static state, thanks to our patented detent torque. The rigid actuator system is not spring-loaded and therefore robust against pressure surges in the medium or overshoot in the process.

In the event of a power failure, integrated SAFEPOS energy storage brings the valve into an individually programmable safety position. The actuator possesses an emergency manual override.



Properties

- Strong: two actuator sizes (nominal force up to 11,500 N), also for valves with large nominal diameters
- Convenient: operation, configuration and diagnostics via display or Communicator tool
- Visible: highly visible operating mode display (360° LED ring), mechanical valve position display
- Food-compliant: EGV 1935/2004 and FDA
- Explosion-proof: suitable for zone 2/22
- Robust: IP65/67
- Hygienic: closed design (positioner and process controller directly integrated into the actuator housing)

Example calculation

	Standard solution Pneumatic actuator	Bürkert solution Electromotive actuator	Framework conditions
	Compressed air consumption on standby Compressed air consumption per stroke cycle	0 Nm³/h 0 NI	
	8 760 Nm³ 3 000 Nm³	0 Nm³ 0 Nm³	Electricity costs €0.30/kWh
	+ Compressed air stroke Compressed air total	0 Nm³ 0 Nm³	
	11,760 Nm³		Compressed air costs €0.10/Nm³ @ 6 bar(g)
	Power consumption on standby Power consumption per stroke cycle	4 W 80 Ws	Current consumption 0.35 kWh/Nm³
	0 W 0 Ws		
	Compressed air standby current + Standby current + Compressed air stroke current + Current stroke Current total	0 kWh 350 kWh 0 kWh 22 kWh 373 kWh	
	3 066 kWh 0 kWh 1 050 kWh 0 kWh 4 116 kWh		System availability 100%
	Standby costs + Valve stroke costs	€876 €300	Time interval 10 years
	Total costs	€1 176	Full stroke cycles 100,000 per year
		€112	

Robust and tightly closing angle seat valves



Bürkert angle seat valves can be actuated with electromotive power, but also pneumatically or manually with a handwheel.

Angle seat control valves are the first choice for large media currents and incredibly suitable for steam, thermal exchange and flow control applications. With their extremely robust, weather-proof, shockproof and vibration-proof structure, angle seat on/off valves are the ideal alternatives to complex ball valves with actuator. Both valve types are available with different valve body connections and approved for drinking water, fuel gases and oxygen.



Electromotive 2/2-way angle seat valve (Open/Close), Type 3320

- Rapid flow shut off
- Hygienic, easy cleaning
- DN 15–80

Electromotive 2-way angle seat control valve, Type 3360

- Good, fast cleaning
- DN 15–65

Highly precise and compact globe valves

Globe control valves by Bürkert are the perfect solution for control tasks, where maximum precision matters, due to the optimised valve body contour. The light and ultra-compact valve bodies are available with different connections. Different plug/seat sets guarantee an optimal layout that suits your individual application. The globe seat on/off valves are the compact alternative to many pneumatically-actuated valves and particularly practical when there is little space or flange are required.



Bürkert globe valves can be actuated with electromotive power, but also pneumatically or manually with a handwheel.



Electromotive 2/2-way globe valve (Open/Close), Type 3321

- Rapid flow shut off
- Hygienic, easy cleaning
- DN 15–100

Electromotive 2-way globe control valve, Type 3361

- Highly precise, dynamic control
- Optimal layout thanks to replaceable valve seats
- DN 10–100

Hygienic and highly resistant diaphragm valves



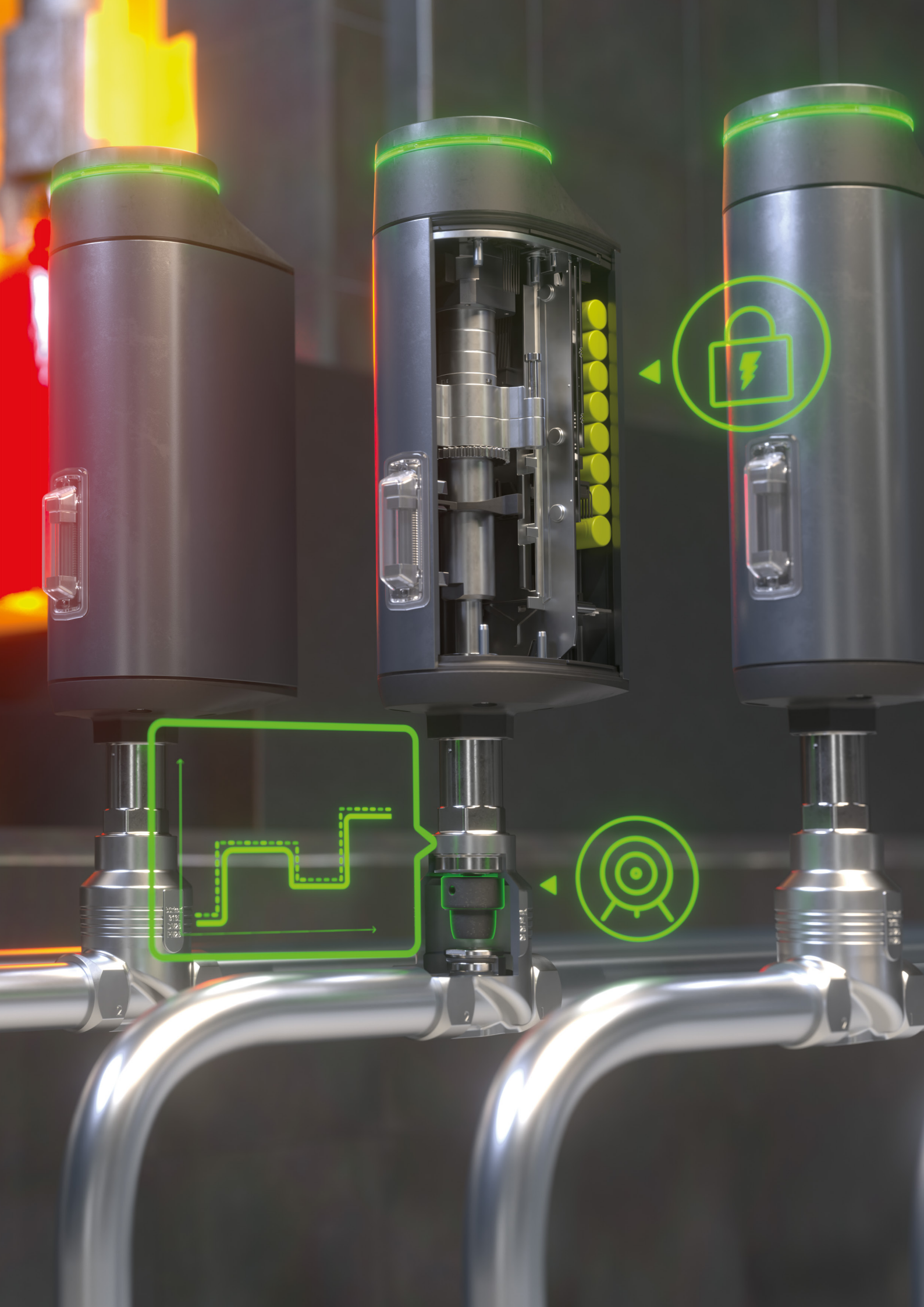
Bürkert diaphragm valves can be actuated with electromotive power, but also pneumatically or manually with a handwheel.

The unique addle profile of Bürkert diaphragms is particularly suitable for controlling high-purity substances, where hygiene, minimal wetting and minimum dead volume are a must. Smart functions for correcting flow and operating characteristics enable the use of diaphragm valves for precise control tasks as well. The media-separated and resistant valve types are available in a wide range of metal and plastic versions and can be used in both aseptic and industrial applications, where corrosive, pure or even abrasive media must be controlled. The diaphragms are available in standardised materials and materials adapted to customer needs for a wide range of requirements with regards to temperature, chemical resistance and USP certification. The corresponding approvals are available.



Electromotive 2/2-way diaphragm valve (Open/Close), Type 3323 & 2-way diaphragm control valve, Type 3363

- Adjustable driving force thanks to integrated force sensor for protecting diaphragm
- Product wetted surfaces of $R_a \leq 0.38 \mu\text{m} \dots 1.6 \mu\text{m}$ (optionally electropolished)
- Perfect cleaning properties
- DN 6–100

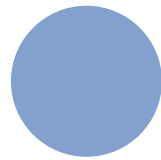


Precisely dosed carbon dioxide

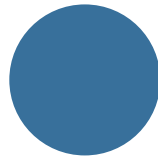
The compact dosing system enables the precise introduction of gas into water.



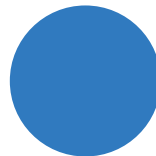
Carbon dioxide is dosed precisely into the water with the Bürkert system solution for industrial water treatment. There is no need to use CO_2 - which involves a degree of energy loss - as a control medium, as the introduction of gases is controlled via an electromotive operated valve. At the same time, the system is designed so that a self-closing valve prevents water flowing back and protects the components in the event of a CO_2 supply failure.

**APPLICATION**

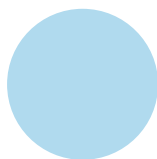
Gas dosing for
water treatment

**REQUIREMENT**

Guaranteed freedom from
oil and grease in oxygen
dosing

**SOLUTION**

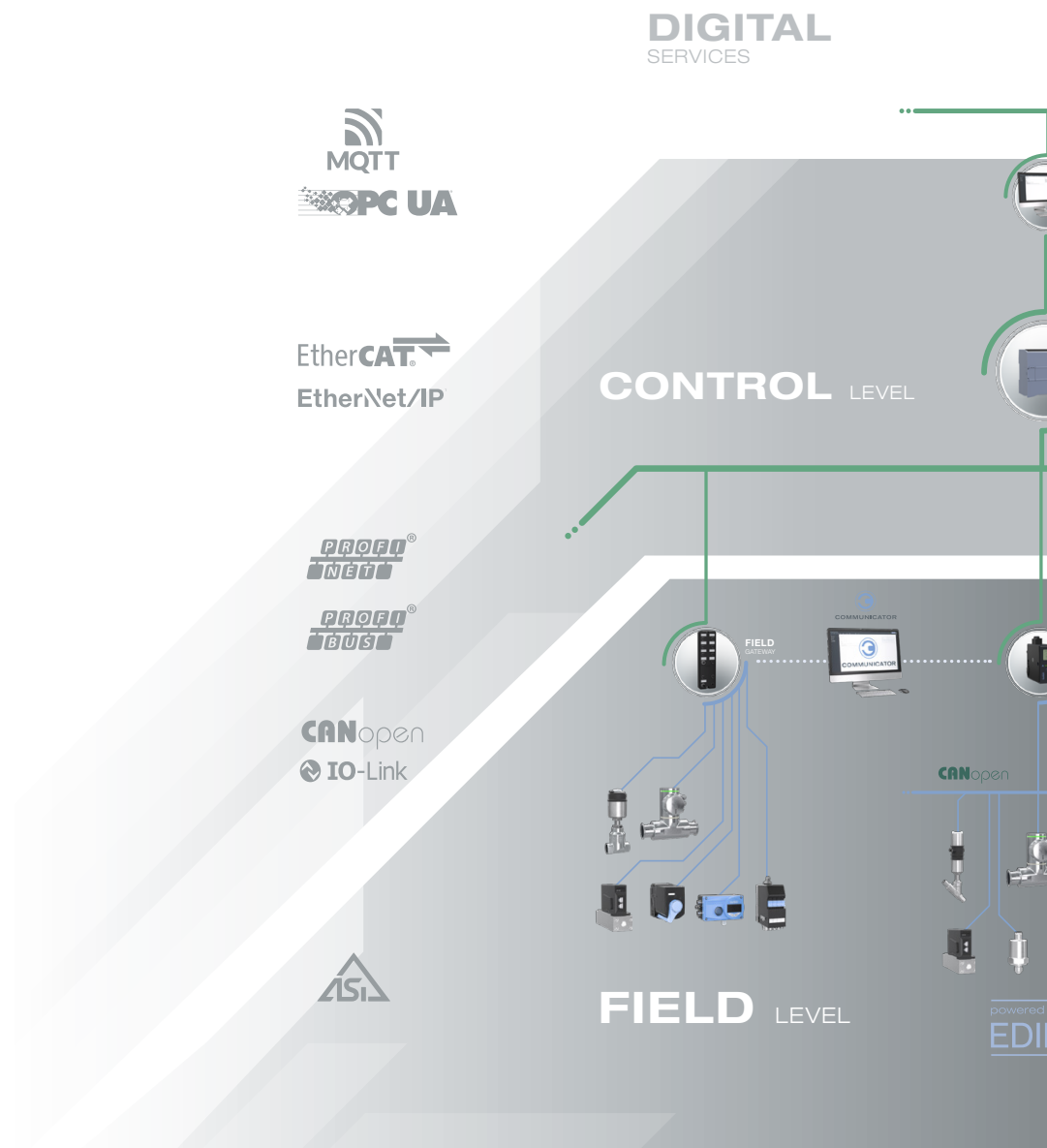
Complete, return current-proof
dosing system with calimetric
gas flow measurement

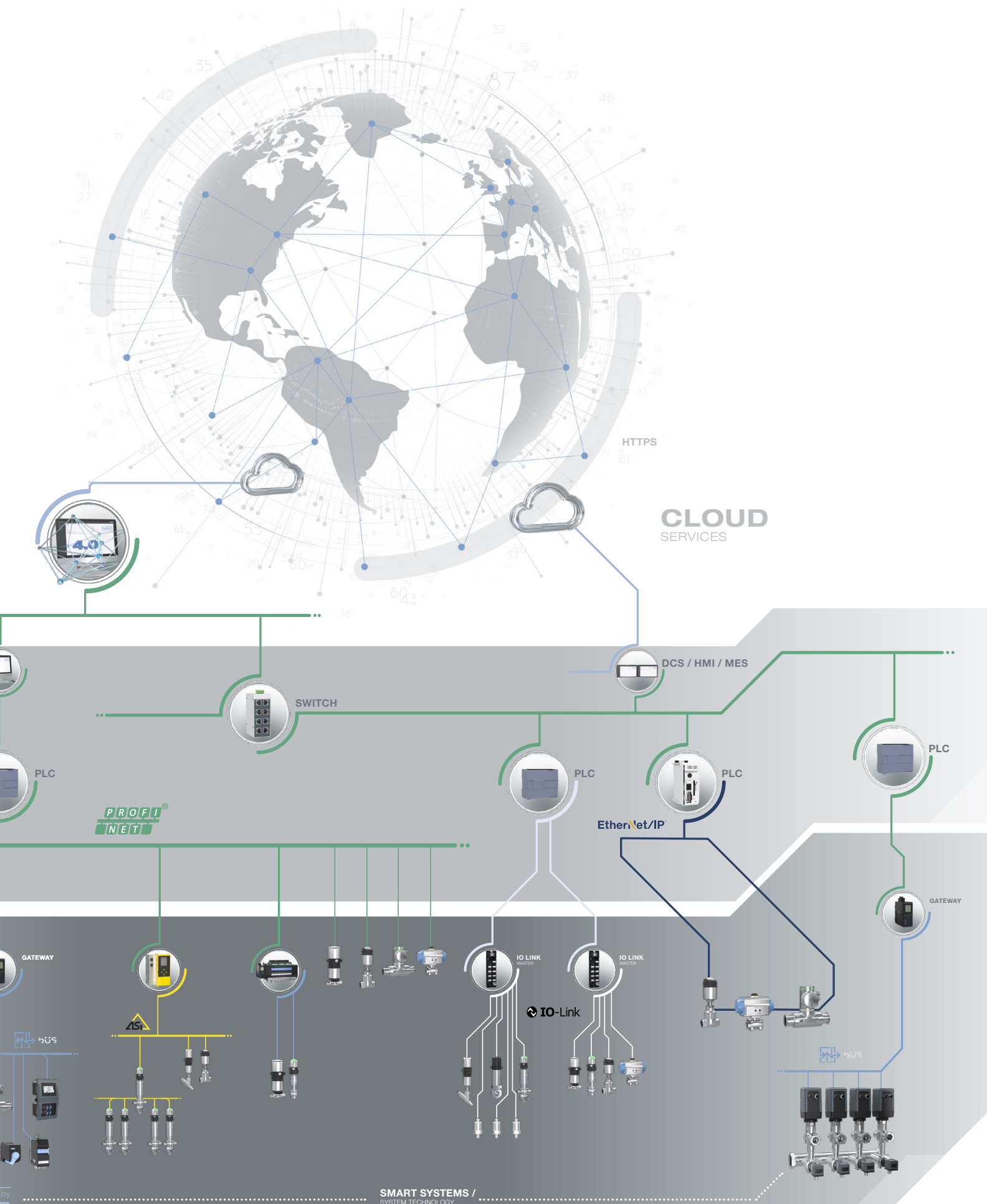
**ADDED VALUES**

Compact, ready-to-connect
solution with uniform
interfaces

Data and information on all levels

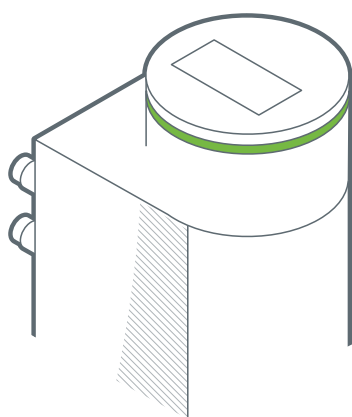
Our open communication solutions support all common communication protocols. We can therefore guarantee simple, consistent communication - including via the Cloud. Our experts will advise you about the automation of valve islands and actuators without bias toward any manufacturer.





Convincing advantages

Communication via
360° LED illuminated ring,
display & fieldbus



Valve data record-
ing



Maintenance
display



Report
fault causes



ATEX/IECEx
for zone 2/22

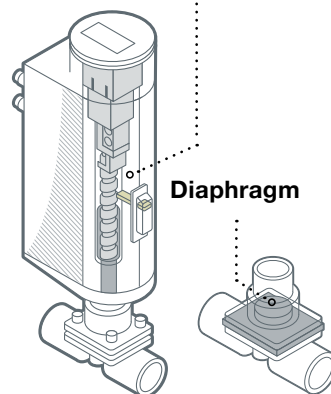


No compressed air
necessary



Material com-
patibility certified
according to
Ecolab inspection
method

Integrated
force monitoring



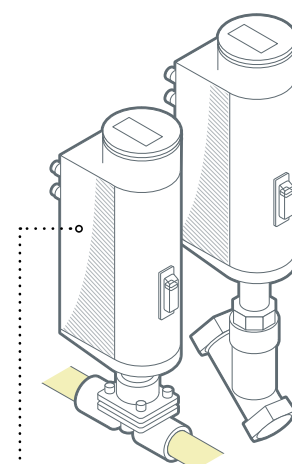
Diaphragm



Reduced
wear

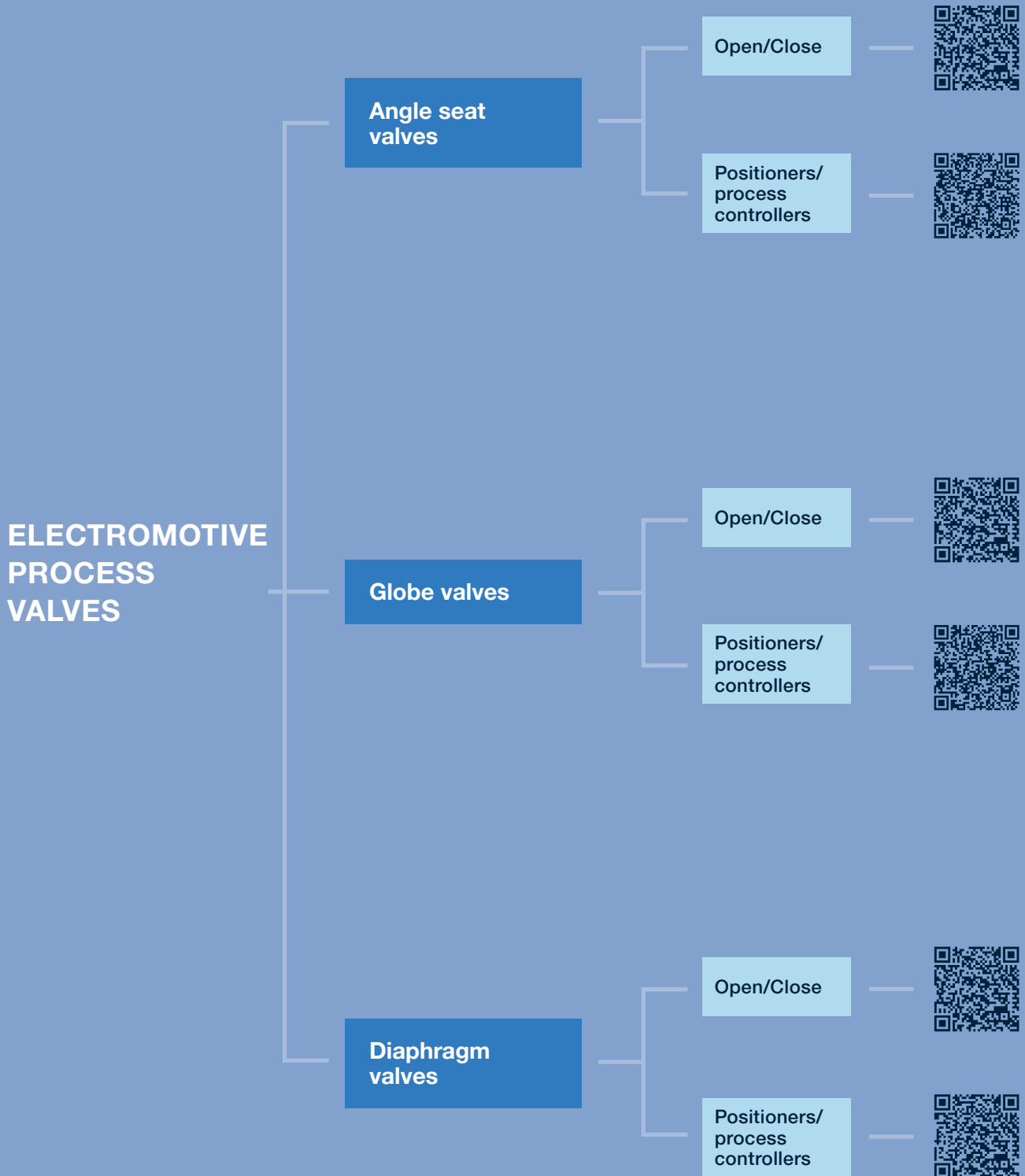


Longer
maintenance
interval



Installed materials are
food-safe

Go quickly to right valve type



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