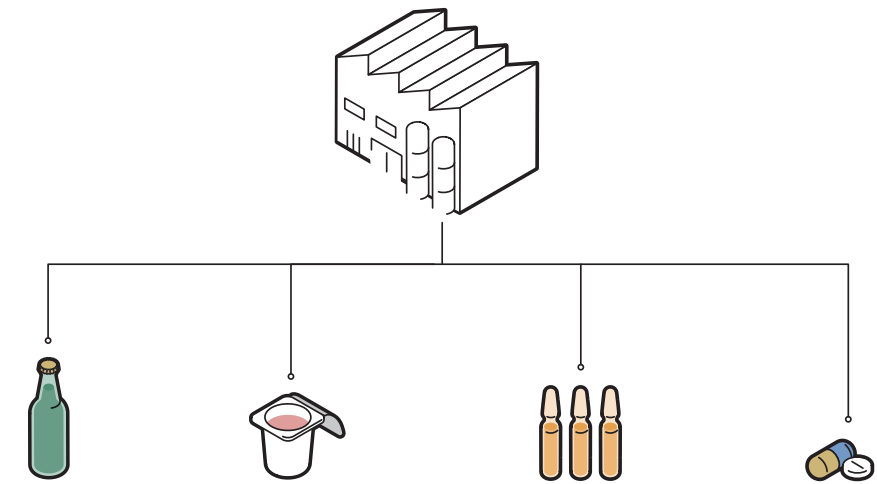




# Decentral plant control for high-level quality and productivity

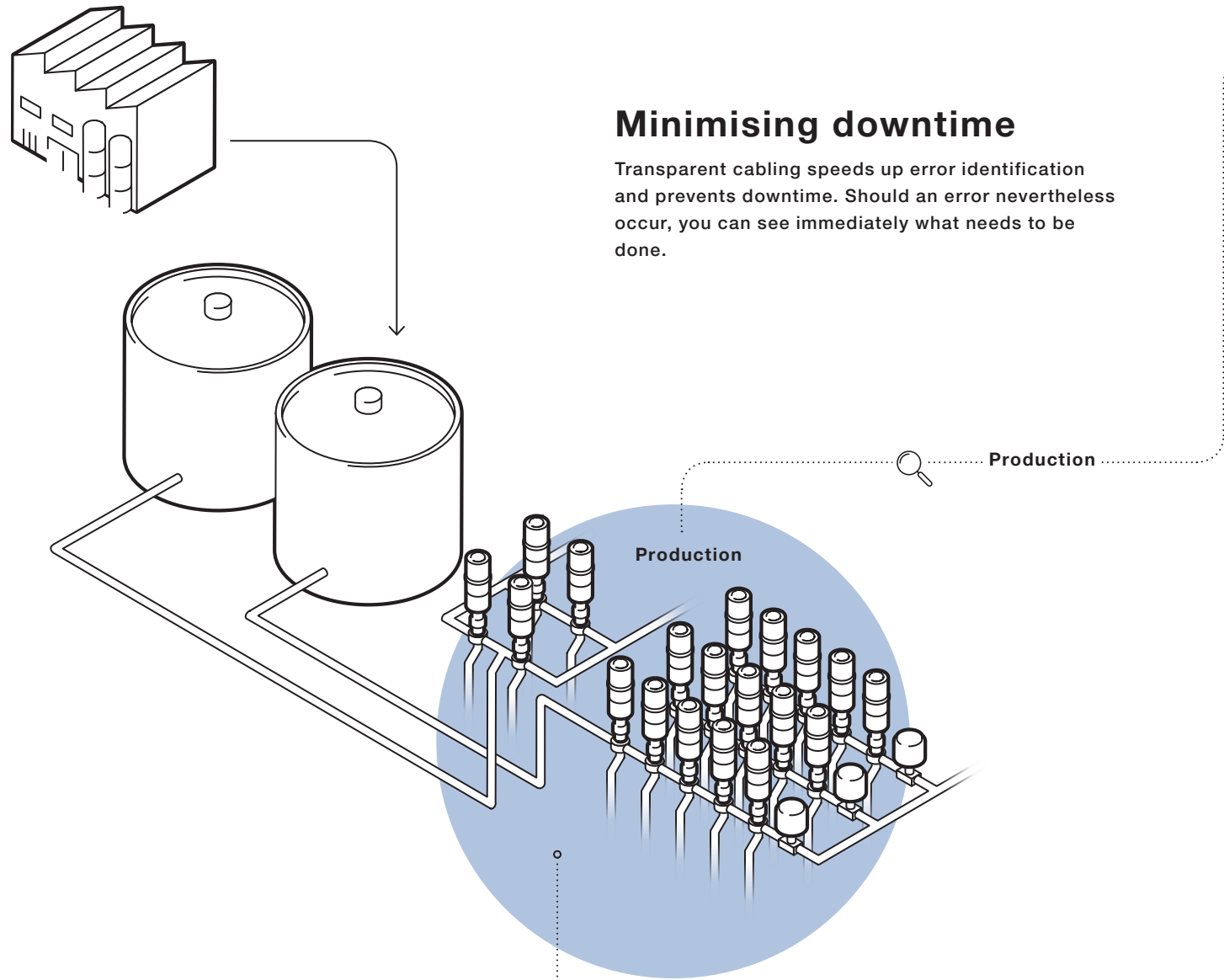
**/ How harmonised are your processes? / To ensure all end products have the same high quality, your plant must guarantee correct control of all media at process level. Several hundred process valves need a reliable timer to switch properly at the right time. When using the Bürkert decentral automation solution, control heads in conjunction with digital communication technologies set the pace. They provide the individual valves with the necessary intelligence to work together quickly, reliably and at the exact right moment – like a well rehearsed orchestra. The ideal basis for the challenges you face in the Industrial Internet of Things.**

**Product quality is of crucial importance in the pharmaceutical industry and in the production of food and beverages. At the same time, producers want to utilise their plants as efficiently as possible while avoiding downtime. Planned maintenance is just as important as targeted process monitoring.**



Do you want to ensure the quality of your products and increase output at the same time? Find out on the following pages how decentral automation makes your plant more productive and reliable.

**/ 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 ensuring your plant runs reliably 24/7.



**Minimising downtime**

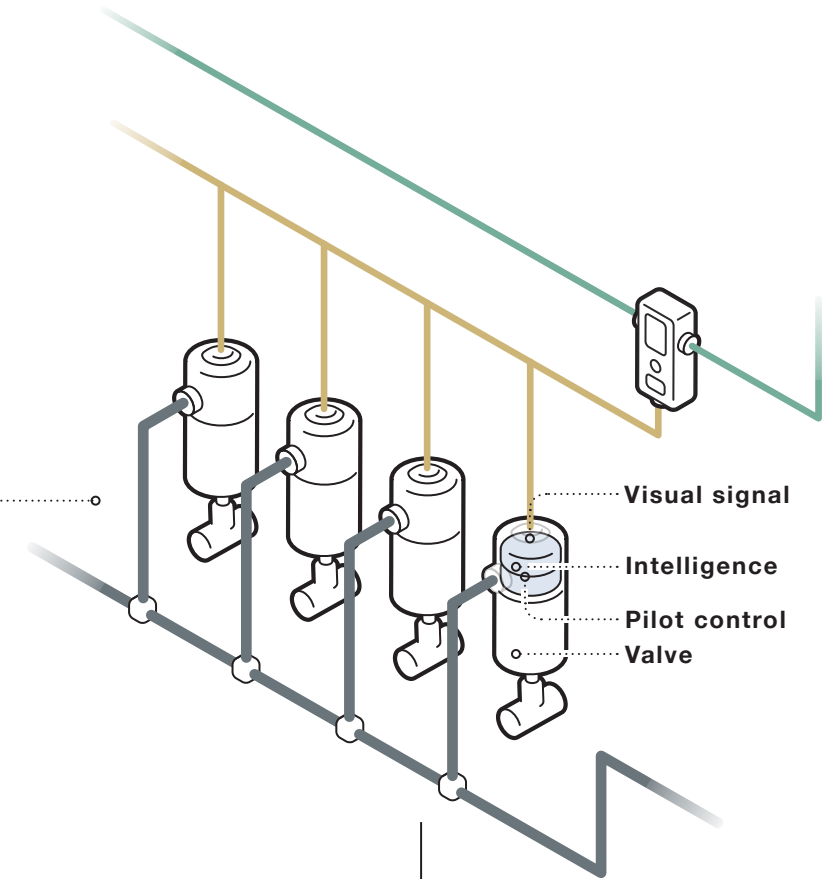
Transparent cabling speeds up error identification and prevents downtime. Should an error nevertheless occur, you can see immediately what needs to be done.

Production

Production

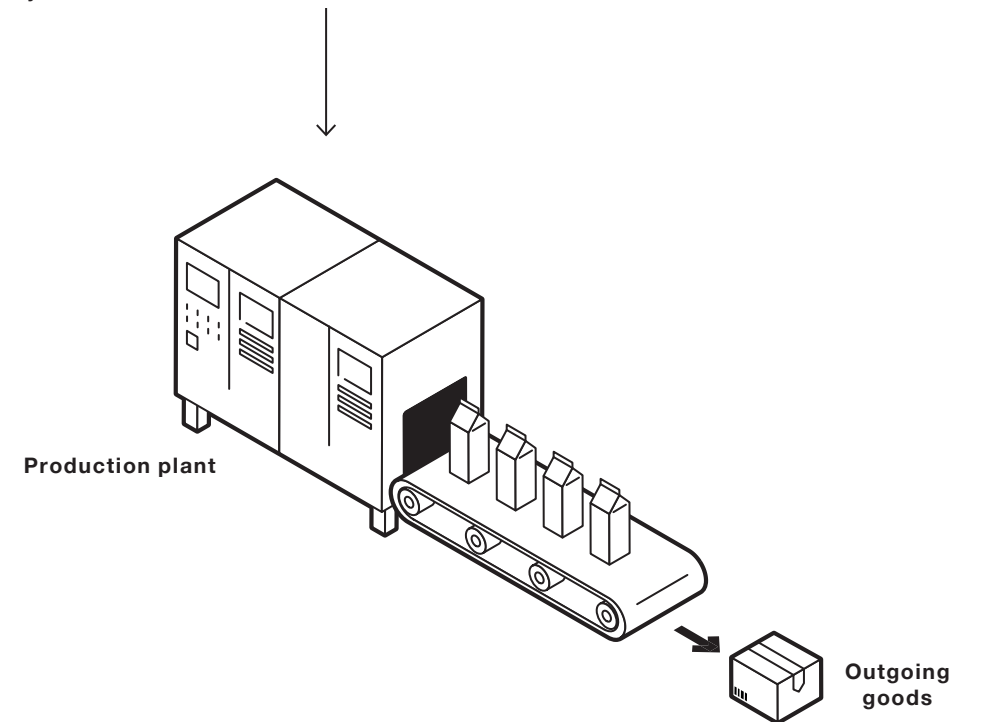
**Optimising operating and maintenance costs**

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.

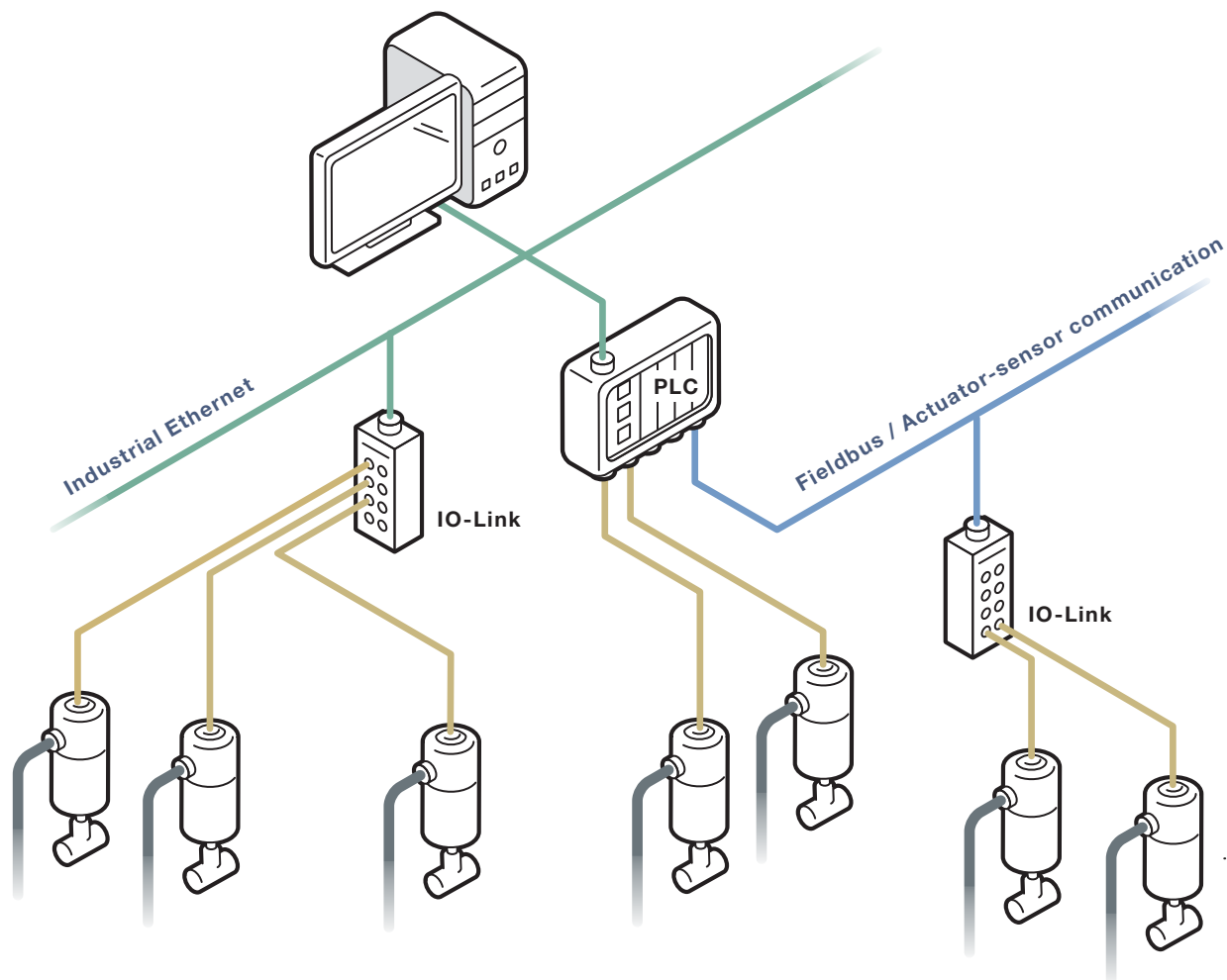


**Ensuring product quality**

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.



**/ Intelligent heads for increased productivity / Decentral automation with Bürkert means: Locally controlled process valves ensure your plant functions efficiently. The intelligence is embedded in the control heads – a concept with many advantages. The valve systems are ideal for clear and concise solutions that can be put into operation quickly and expanded flexibly. Their hygienic design means cleaning has never been easier. Digital communication standards facilitate safe operation and predictive maintenance. Furthermore, the Bürkert control head Type 8681 is a universal solution that allows the fast and simple automation of all process valves from various manufacturers.**



**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 automated 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.

**/ Built for reliability / Intelligent process valves not only minimise the risk of failure, they also ensure predictable maintenance. This is based on a unique principle: Control heads integrated in the process valve that communicate digitally with your control level and signal the status locally.**

**Position detection – contactless and continuously**

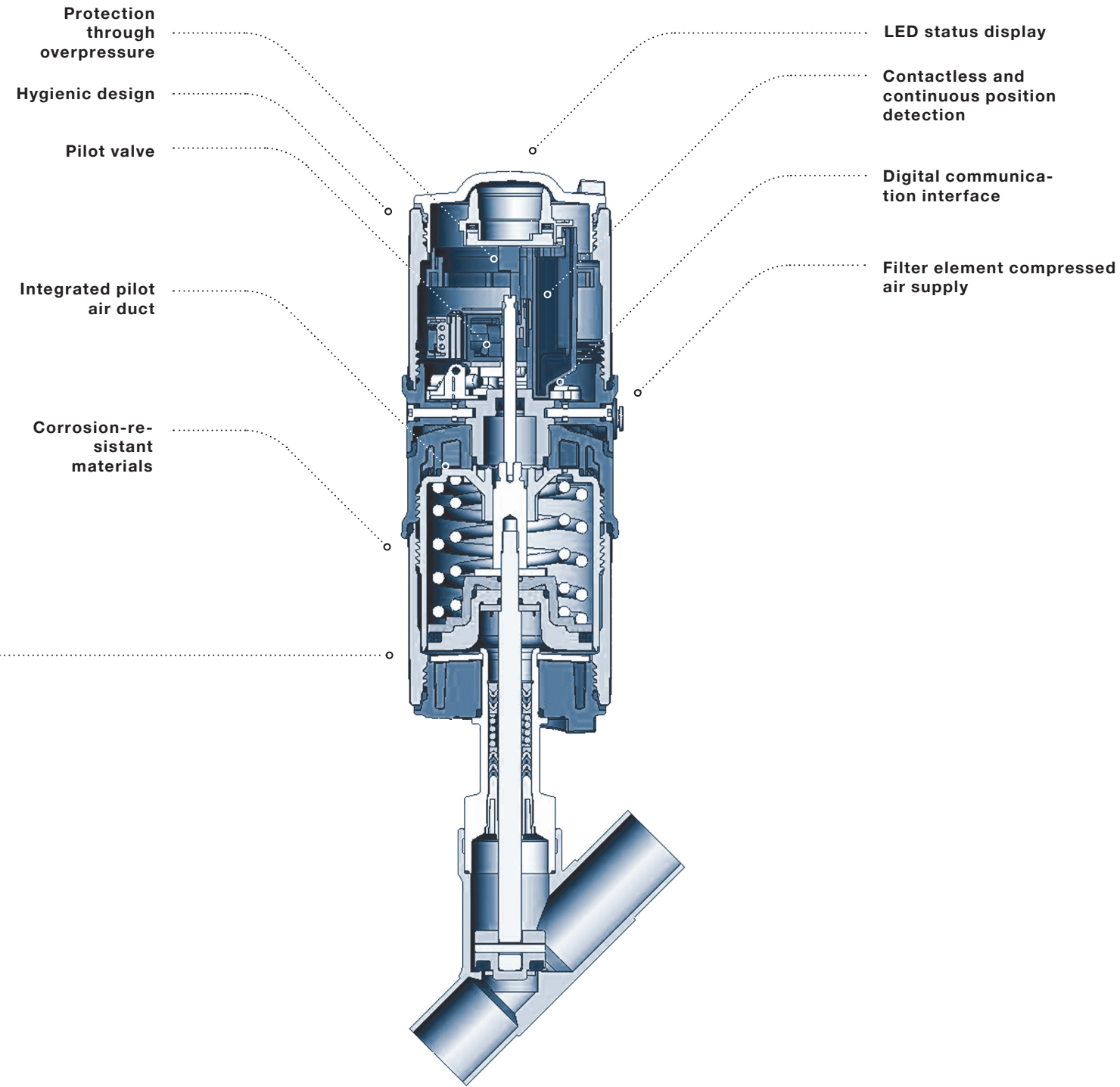
The automatic teach function for setting the end-position feedback supports reliable and long-lasting plant operation. The position of the valve is detected continuously and in high resolution, thereby enabling rapid detection of seat wear and predictive maintenance response.

**Body design – robust and durable**

Corrosion-resistant materials make the body durable and resistant to aggressive cleaning chemicals. An internal overpressure in the control head additionally provides reliable IP protection even in extreme ambient conditions – thus permanently ensuring reliable operation of your plant.

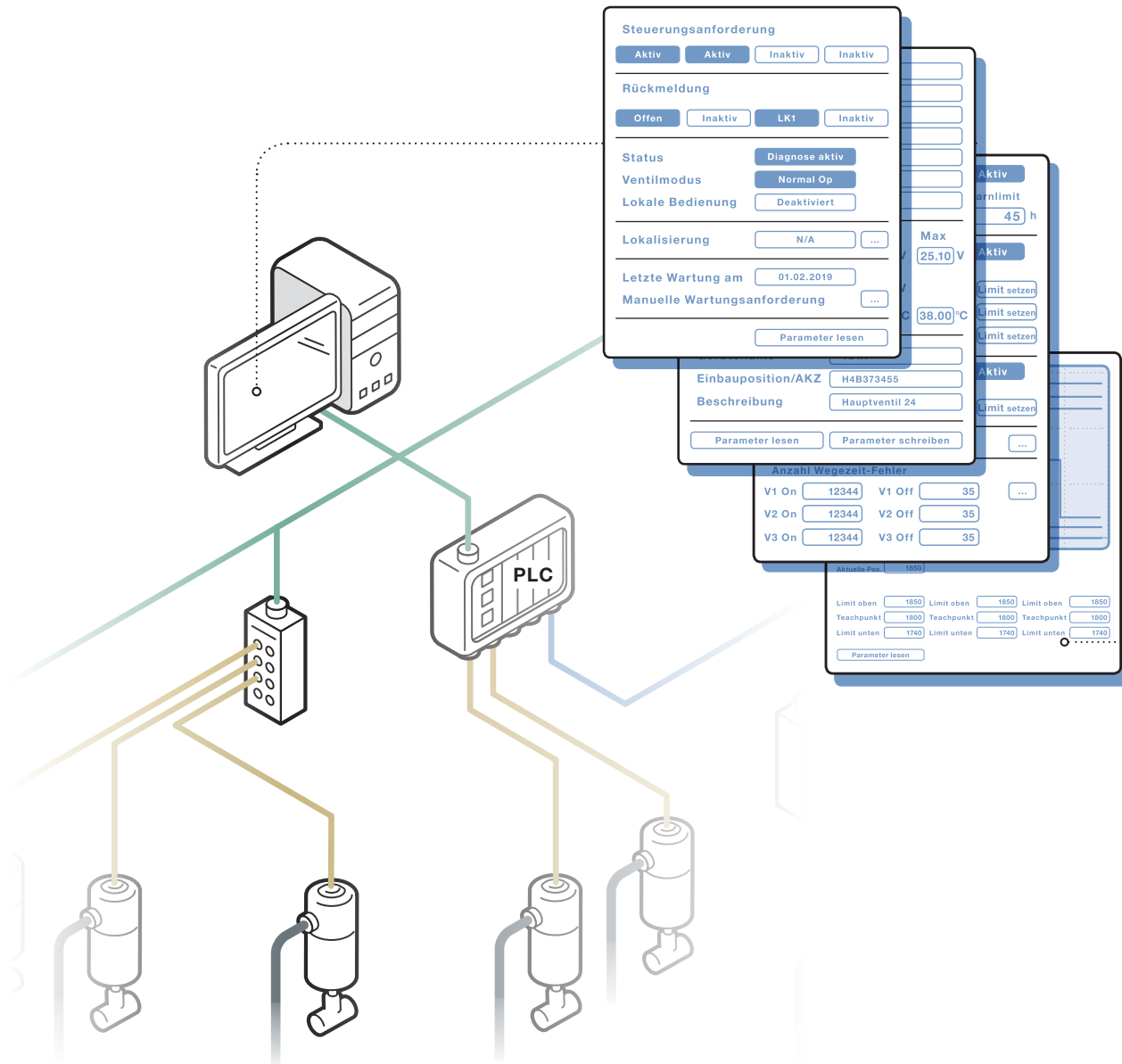
**Pilot valve**

To speed up work processes, operate the integrated process valve manually, if necessary, without an electrical power supply. Further cleverly designed details: The integrated, hygienically designed pilot air duct minimises the risk of failure while protecting actuator chambers and seals from environmental influences, such as moisture or chemicals. Tools are not needed to maintain the stainless steel filter element.





**/ Precise diagnostics / How are your process valves getting on? Thanks to intelligent diagnostic capabilities you always know the answer – and can schedule maintenance instead of having to deal with an unsuspected problem. Coloured high-performance LEDs display the current status locally. Counters with definable limit values register the number of switching cycles as well as the switching speed – and signal the next required maintenance in good time. The localisation function allows you to locate devices and to quickly put your plant back into operation after servicing or maintenance work.**



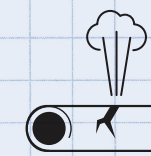
**Example calculation**

To switch a pneumatic process valve, both the actuator volume and the pneumatic air hose must be pressurised. This air volume can be seen as lost energy, as it does not contribute to actuator operation at all. With a decentral automated process valve, this loss of volume is completely eliminated, since the pilot valve is located directly at the process valve actuator. In addition, a decentral automated plant also means a reduction in leakage losses. The following example calculation illustrates the savings potential that can be made with a decentral automation solution.

**The facts of an exemplary plant:**

- 2,000 pneumatically actuated process valves, with lines at an average of 20m per valve
- Roughly 40 km long line tubing\* with distributed plant automation
- Ø 5 switching operations per hour

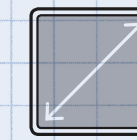
**Compressed air leakage losses**



40 km long line tubing  
Ø 5l/min/km

= 105,000 m<sup>3</sup>/year

**Losses due to dead volume**

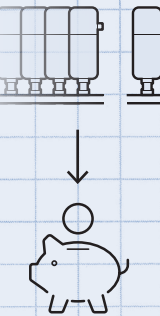


40 km long line tubing\*  
5 switching operations/h  
with 0.5l actuator volume

= 15,000 m<sup>3</sup>/year

= 120,000 m<sup>3</sup>/year

**Possible total compressed air savings potential thanks to a decentral automation solution**



\* 6/4mm hose



## Decentral automation

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